# FREDERICKSBURG REGIONAL TRANSIT
# TRANSIT DEVELOPMENT PLAN
# FISCAL YEAR 2011-2016

**October 2010**

**Final Report**

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CONNETICS TRANSPORTATION GROUP

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# 1.0 OVERVIEW OF TRANSIT SYSTEM

The Fredericksburg Region is centrally located along the I-95 corridor between Washington, DC and Richmond, VA and is one of the fastest growing regions in Virginia with a population of more than 350,000 people according to the Fredericksburg Area Metropolitan Planning Organization (FAMPO). On the shores of the Rappahannock River, the FAMPO region includes the City of Fredericksburg and counties of Caroline, King George, Spotsylvania and Stafford and is part of the George Washington Regional Commission (GWRC). Fredericksburg is home to the University of Mary Washington, which has 4,000 undergraduate students enrolled in the residential campus in the City of Fredericksburg and 1,000 students enrolled in the University's College of Graduate and Professional Studies located in Stafford County. Major employers include the Geico Regional Headquarters, Mary Washington Healthcare and military bases such as Dahlgren and Fort AP Hill. The region is also known for its historical significance including numerous battlefields and George Washington's boyhood home.

FREDericksburg Regional Transit (FRED) provides fixed route transit service with deviations to the Fredericksburg Region including the City of Fredericksburg and Spotsylvania, Stafford, Caroline and King George Counties. According to 2008 NTD data, FRED's service area is 242 square miles with a population of 113,716.

## 1.1 TRANSIT HISTORY

FREDericksburg Regional Transit (FRED) formed in 1996 to provide service to the City of Fredericksburg. FRED service grew from four routes and five vehicles in its opening year to 23 routes and 31 vehicles in 2010. While FRED originated as City of Fredericksburg service, the system is now regional in scope and also serves Caroline, King George, Spotsylvania and Stafford Counties. In 1998, FRED expanded service into Spotsylvania County. FREDExpress service to the University of Mary Washington followed in 1999. Service in southern Stafford County started in 2001, and Caroline County service began in 2002 with a service expansion in 2003. Service in northern Stafford and King George Counties began operation in 2005. In 2007, FRED began providing feeder service to the Virginia Railway Express station in downtown Fredericksburg.

The Lawrence A. Davies Transit Center (FRED Central) on Jefferson Davis Highway houses FRED offices and also serves as a transit center. The new facility opened in 2007. In 1997, FRED became the local agent for the intercity bus service provider, Greyhound, which also shares transit center facilities at FRED Central. FRED's leased maintenance facility is located a mile from FRED Central and has been in operation since 2007. FRED is currently in the process of purchasing the site with plans to expand over time. Key service oriented milestones of the last few years are listed below.

- 2006 – FRED completed a 5-year TDP
- 2007 – The Lawrence A Davies Transit Center (FRED Central) opened
- 2007 – FRED started VRE Feeder Service
- 2007 – FRED conducted a feasibility analysis of building a "greenfield" maintenance facility
- 2007 – FRED eliminated free transfers
- 2007 – FRED launched its website: www.ridefred.com

- 2008 – FRED leases space for a maintenance facility with an option to buy the entire property
- 2009 – FRED increased basic fares from $0.25 to $0.50

## 1.2 Governance & Organizational Structure

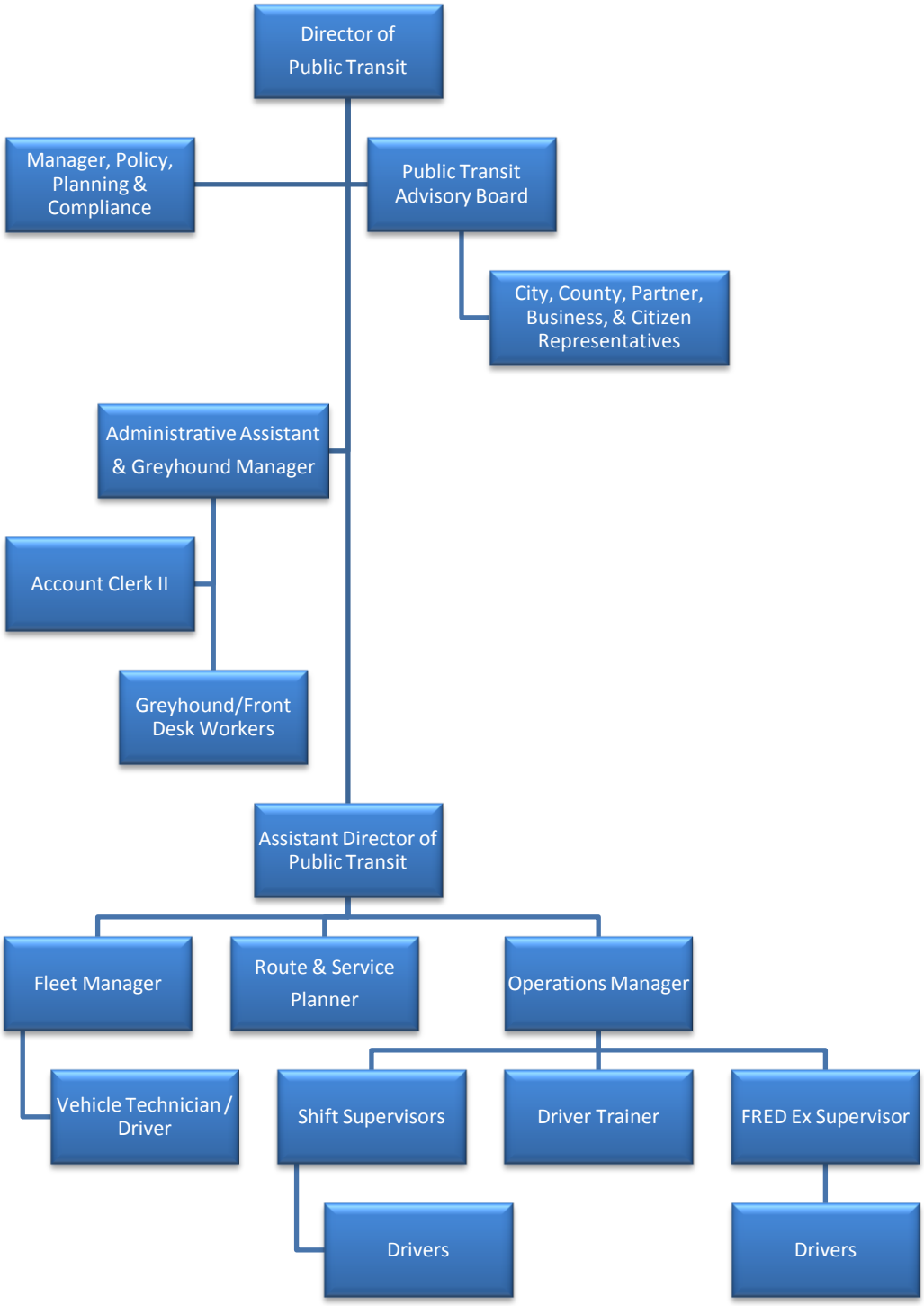
FREDericksburg Regional Transit (FRED) is owned and operated by the City of Fredericksburg and governed by the City Council. In addition to the City of Fredericksburg, FRED has several funding partners. Partner jurisdictions, which include Spotsylvania, Stafford, Caroline and King George Counties, provide a local match based on the percentage of service received. Agreements with public partners are renewed annually. Additionally, FRED has several private partners that provide monetary or in-kind support.

Funding partners and other constituencies are members of FRED's Public Transit Advisory Board (PTAB), which provides citizen and partner input on public transit needs, evaluates the operational and financial performance of FRED and advises the City Council on public transit issues. The PTAB is made up of one voting member from each of the following: localities that receive transit service; the Fredericksburg Area Chamber of Commerce; the George Washington Regional Commission; the disAbility Resource Center; one representative for FRED users; one Representative for non-users of FRED; and private partners contributing $25,000 or more to FRED per year in cash or in kind. As of July 1, 2010, FRED's private partners included Mary Washington Healthcare/Medicorp, the University of Mary Washington, the Star Radio Group, the Free Lance-Star and HCA Healthcare. Each jurisdiction and constituent organization appoints its own representative to the PTAB. Citizen/community representatives are approved by City Council. PTAB members serve until replaced. The following is a list of current PTAB members.

- Lawrence A. Davies – City of Fredericksburg
- Rodney White – Spotsylvania County
- Mike Neuhard– Stafford County
- Angeline Pitts – Caroline County
- Jack Green – King George County
- Richard Pearce – University of Mary Washington
- Tom McCoy – Mary Washington Healthcare
- Diana Utz – George Washington Regional Commission
- Jan Erkert – Fredericksburg Regional Chamber of Commerce
- Debe Fults – disAbility Resource Center
- John Moen – Star Radio Group
- Deneal Helms – The Free Lance-Star
- Fred Sisk – Citizen Representative
- Dr. Roy Weinstock – Community Representative
- Bryan Workman- HCA Healthcare

FRED Staff are employed by the City of Fredericksburg with a Director of Public Transit overseeing the operation. FRED employees are nonunionized and most are part-time employees. Key management personnel include Kathleen M. Beck, Director of Public Transit; Wendy L. Kimball, Assistant Director of Public Transit; Glenn Jenkins, Operations Manager, Arnold Levine, Manager of Policy Planning and Compliance and Daniel Stribling, Fleet Manager. Figure 1.1 shows the FRED Organizational Chart.

**FIGURE 1.1: FRED ORGANIZATIONAL CHART**




## 1.3 Transit Services Provided and Areas Served

FRED provides fixed route transit service with deviations on Monday through Friday from 6:30 a.m. until 8:30 p.m. The service area includes five routes in the City of Fredericksburg, six Stafford County routes,

three routes in Spotsylvania County, two King George County routes and two routes in Caroline County. Because the fixed route service is deviation service, all of FRED's fixed routes can deviate within a ¾ mile radius or up to two minutes of the fixed route alignment with 24 hours' notice. FREDExpress is limited service to the University of Mary Washington with three routes on Thursday and Friday nights as well as on Saturday and Sunday during the academic school year and is available to the public at large. FRED also provides feeder service to the VRE train station on weekdays during peak travel times via three routes. Partner jurisdictions provide funding for the local match based on the number of revenue hours of service they receive from FRED. FRED is also the local agent for Greyhound intercity bus service from Fredericksburg. Tables 1.1 through 1.3 list all FRED fixed routes, FREDExpress and VRE Feeder routes, areas served, hours of operation and key destinations. The maps in Figures 1.2 through 1.4 show all of the routes in FRED's service area

Some FRED routes convert from one route to another in the morning and afternoon to cover the VRE feeder routes and Stafford commuter lot shuttle. For example, the VRE feeder buses convert to the F4 and S1 to supplement those routes during the day. The Stafford commuter lot shuttle becomes the D4 during the midday. Route F4 requires two buses (F4A and F4B). Route F1 is interlined with Route F4, as it operates the Route F4 from 7:30 a.m. until 8:30 a.m. and again at 7:30 p.m. until 8:30 p.m. From 8:30 a.m. until 7:30 p.m. the route operates as Route F1.

All of FRED's routes require one vehicle with the exception of F4, City of Fredericksburg, S1 – Spotsylvania County and the VFS1 – the Spotsylvania County VRE Feeder Service, which require two vehicles. While FRED Central is the primary transfer hub with seven route connections, secondary transfer locations are located throughout the region. Lee's Hill Shopping Center provides hourly connections to five routes and Stafford Market Place provides a regular transfer point between two routes. Other approved transfer points include Spotsylvania Towne Centre, Bowling Green DSS, Stafford Courthouse, and Shops at King George. Additionally, untimed transfers can be made at various other shared stops throughout the service area.

All of FRED's vehicles are equipped with bicycle racks. Pedestrian connectivity is prevalent in urban areas and FRED vehicles often travel into shopping centers and apartment communities to provide front door service. Some stops in the suburban and rural parts of the service area, however, are not located on pedestrian friendly roadways.

FRED does not provide additional complementary paratransit service. Any FRED passenger may call 24 hours in advance to request a route deviation within a ¾ mile radius of the fixed route. This deviation service meets the ADA paratransit service requirements. Additionally, the entire FRED fleet is equipped with wheelchair lifts, and all drivers are trained to use the lifts. Stops that are wheelchair accessible are designated as such on bus stop signs.

While FRED does not have a bus stop and shelter program in place, they do provide guidelines to municipalities that want to add stops or shelters. Municipalities can request a new stop or stop amenities from FRED. As part of the process, FRED staff will review potential sites with the municipalities and provide criteria to select and evaluate the stop.

**FIGURE 1.2: FRED FIXED ROUTE SERVICE**

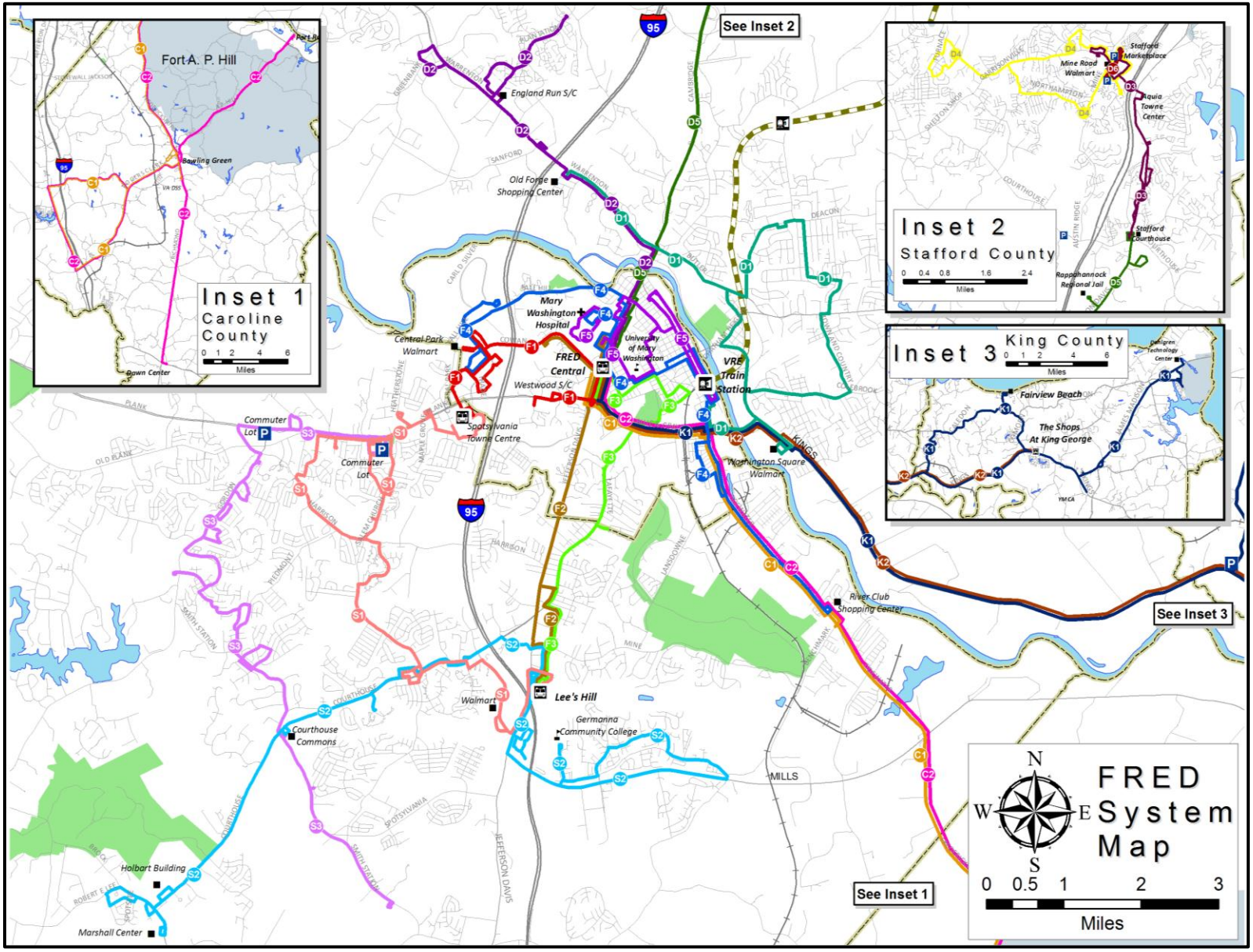


**FIGURE 1.3: FRED VRE FEEDER ROUTES**

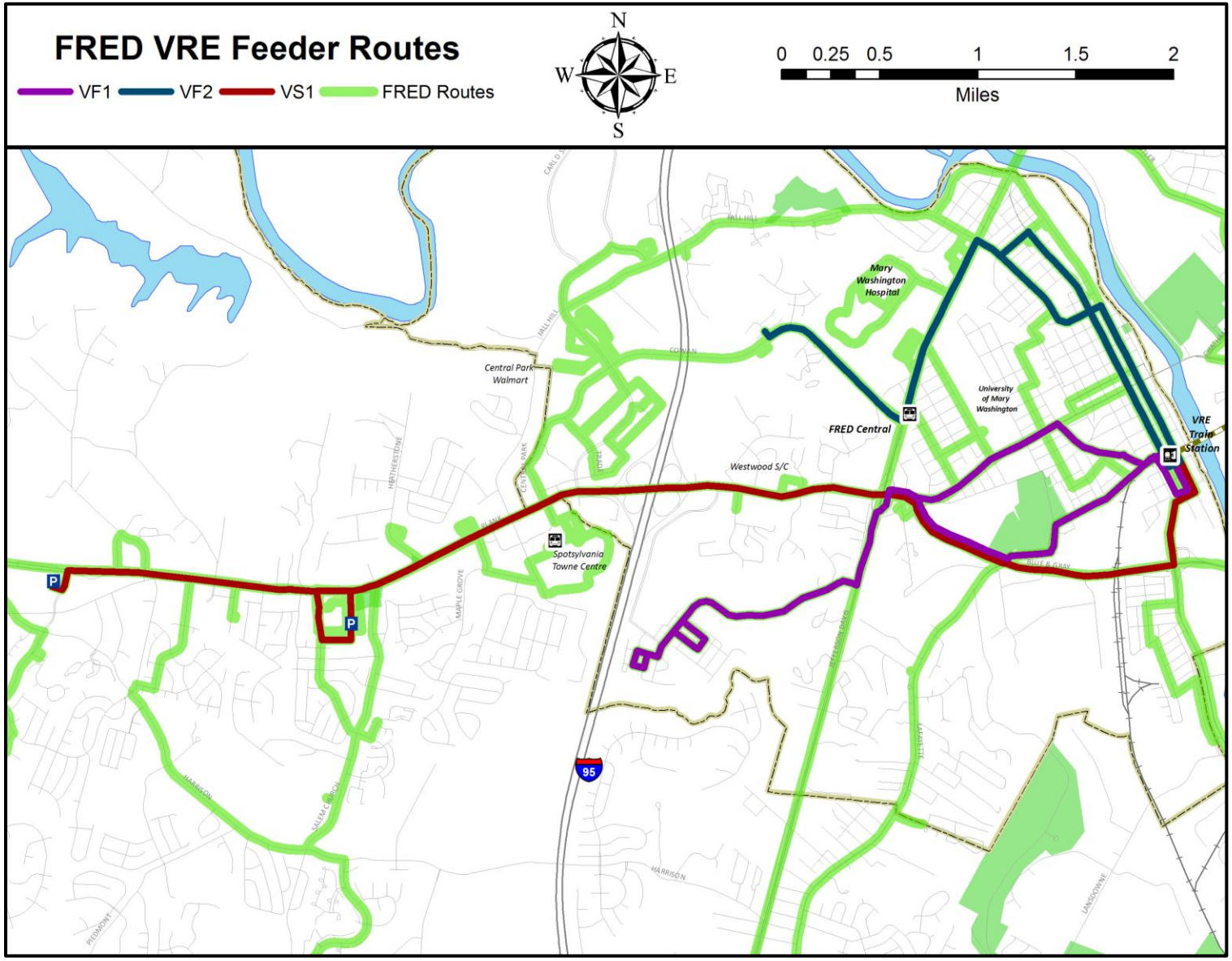


**FIGURE 1.4: FREDEXPRESS (UMW) ROUTES**

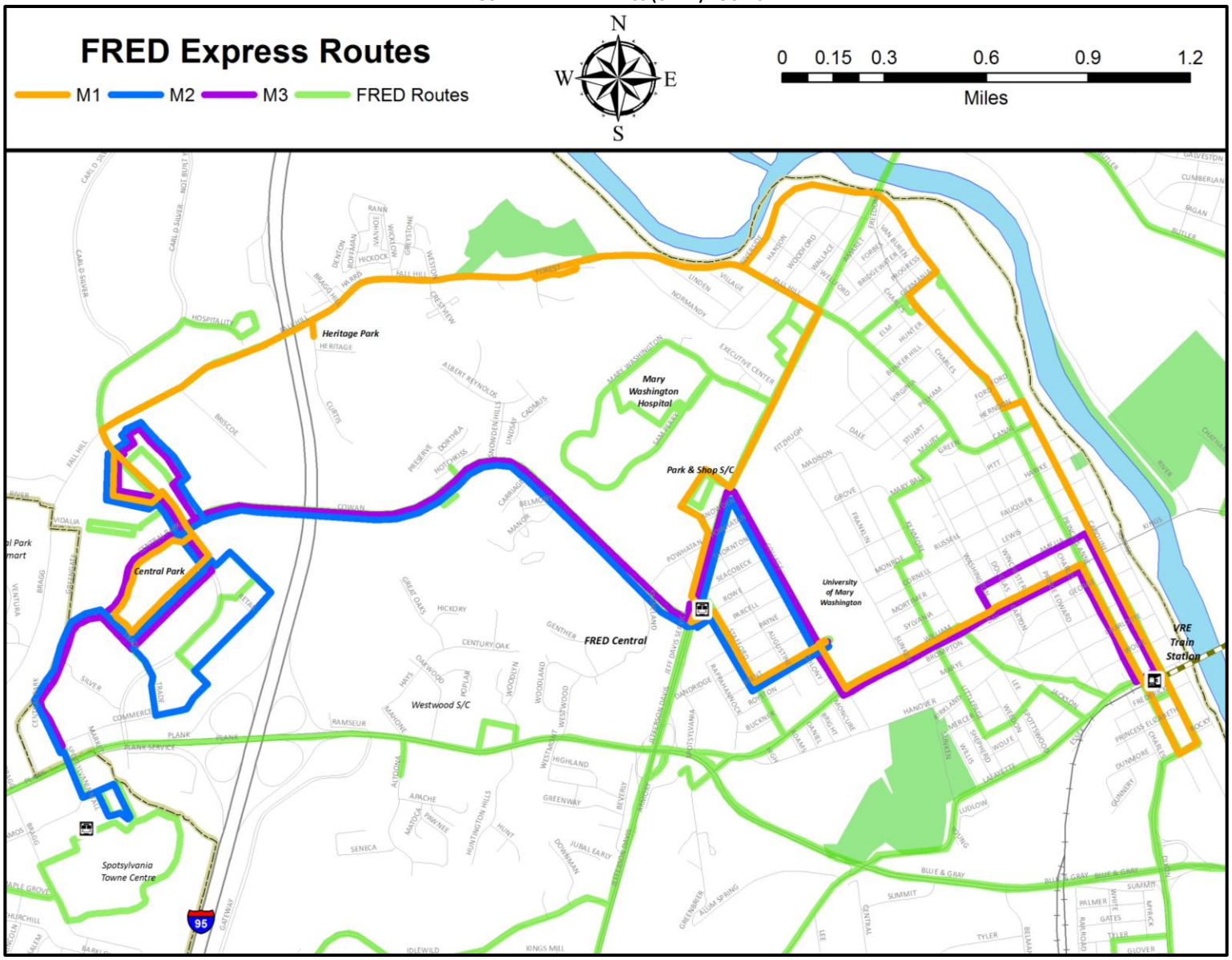


**TABLE 1.1: FRED FIXED ROUTE DEVIATION SERVICE**

| Route | Area Served | Hours of Operation | Key Destinations |
|---|---|---|---|
| **F1** | City of Fredericksburg | 8:30 am – 7:30 pm. | Central Park, Madonna House, The Evergreens, Monticello Apt, Belmont Apt, Snowden Village Apt, Hugh Mercer Elementary, Spotsylvania TC, Westwood SC |
| **F2** | City of Fredericksburg | 7:30 a.m. – 8:30 p.m. | Townsend Apt, Cedar Ridge Apt, Kings Mill, Wellington Lake Apt, Lee's Hill SC, Madonna House, The Evergreens, Monticello Apt, Belmont Apt, Hugh Mercer Elem. |
| **F3** | City of Fredericksburg | 7:30 a.m. – 8:30 p.m. | Lee's Hill Center, Olde Greenwich Townhouses, Wellington Woods Apts, Lee's Hill SC, Lafayette Square, Lafayette Blvd, VA Employment Commission, RACSB, FRED Central |
| **F4** | City of Fredericksburg | 7:30 a.m. – 8:30 p.m. | VRE Station, Dixon St. Park, UMW, Central Park, Fredericksburg SC, River Club SC, Park & Shop, Mary Washington Healthcare, Bragg Hill Family Life Center, Hazel Hill, Sylvania Heights, Mayfield, Crestview Apt, Forest Village Apt, Heritage Park Apt, Wegmans |
| **F5** | The Downtown Loop | 8:30 a.m. – 8:30 p.m. | FRED Central, UMW, VRE Station, DT Parking Garage, Visitors Ctr, Mary Washington Healthcare, Park & Shop, Fredericksburg SC, Dorothy Hart Community Center |
| **D1** | Southern Stafford County | 9:00 a.m. – 7:00 p.m. | VRE Station, Ferry Farm SC, Olde Forge SC, Wash. Sqr. Walmart, Woodlawn SC, YMCA |
| **D2** | Southern Stafford County | 8:00 a.m. – 8:00 p.m. | FRED Central, England Run Olde Forge SC, Geico |
| **D3** | Stafford County | 7:30 a.m. – 6:30 p.m. | Stafford Courthouse, Aquia Towne Center, Doc Stone Center, Walmart, Brafferton SC, Forreston Village SC |
| **D4** | Stafford County | 8:50 a.m. – 4:30 p.m. | Stafford Market Place, Doc Stone Center, Family Health Center, DMV, Vista Woods, Porter Library, Walmart, Northampton Blvd. |
| **D5** | Stafford County | 7:00 a.m. – 7:00 p.m. | FRED Central, Rappahannock Regional Jail, Stafford Courthouse |
| **D6** | Stafford County Express | Peak Period Only | North & South VDOT Commuter Lots |
| **S1** | Spotsylvania County | 8:00 a.m. – 8:00 p.m. | Lee's Hill Center, Hilltop Plaza, Wal-Mart at Southpoint II, Ukrop's, Spotsylvania Crossing SC, Meadows of Salem Run, Kings Crest Apt |
| **S2** | Spotsylvania County | 8:00 a.m. – 8:00 p.m. | Lees Hill Ctr, Breezewood SC, Hilltop Plaza, Brittany Commons, Asbury Manor, DMV, Courtland Commons, Holbert Bldg, Marshall Ctr, Germanna CC, Massaponax Outlets |
| **S3** | Spotsylvania County | 8:30 a.m. – 8:30 p.m. | Harrison Crossing, Legacy Woods, Deerfield, Salem Fields, Cortland Commons, YMCA |
| **K1** | King George County | 7:00 a.m. – 7:00 p.m. | FRED Central, Washington Square Plaza, Revercomb Bldg, Edgehill, Dahlgren, Sealston, Fairview Beach, The Shops at King George, King George SC |
| **K2** | King George County | 8:00 a.m. – 10:00 a.m.<br>2:00 p.m. – 4:00 p.m. | FRED Central, The Shops at King George, Sealston, Washington Square Plaza |
| **C1** | Caroline County | 7:15 a.m. – 5:45 p.m. | Bowling Green, Carmel Church, Corbin, FRED Central, Ladysmith |
| **C2** | Caroline County | 11:10 a.m. – 6:30 p.m. | Bowling Green, Dawn Center, Port Royal |

**TABLE 1.2: FREDEXPRESS SERVICE**

| Route | Area Served | Days/Hours | Key Destinations |
|---|---|---|---|
| **M1** | Downtown/Central Park | Saturday: 8:30 a.m. – 9:30 p.m.<br>Sunday: 9:30 a.m. – 6:30 p.m. | FRED Central, UMW, VRE Train Station, Central Park |
| **M2** | Central Park/Towne Centre | Thursday: 7:00 p.m. – 10:00 p.m.<br>Friday: 7:00 p.m. – 10:00 p.m.<br>Saturday: 9:00 a.m. – 10:00 p.m.<br>Sunday: 10:00 a.m. – 7:00 p.m. | UMW, Central Park, Spotsylvania Towne Centre, Cowan Blvd. |
| **M3** | Late Night Express | Friday: 10:00 p.m. – 1:00 a.m.<br>Saturday: 10:00 p.m. – 1:00 a.m. | UMW, Caroline Street, Central Park |

**TABLE 1.3: VRE FEEDER SERVICE**

| Route | Area Served | Hours | Key Destinations |
|---|---|---|---|
| **VS1** | Spotsylvania VRE Feeder Service | 4:45 a.m. – 7:50 a.m.<br>2:26 p.m. – 8:35 p.m. | Gordon Road Commuter Lot, Ukrop's Commuter Lot, Train Station |
| **VF1** | Fredericksburg VRE Feeder Service | 4:40 a.m. – 7:50 a.m.<br>2:26 p.m. – 8:35 p.m. | Idlewild, Maury Stadium, Train Station |
| **VF2** | Fredericksburg VRE Feeder Service | 4:50 a.m. – 7:50 a.m.<br>5:09 p.m. – 8:30 p.m. | The Preserves at Smith Run, Cowan Blvd, DT Fredericksburg |

### Other Service Providers

There are several other transit service providers in the Fredericksburg region not operated by FRED. Most are designed to provide commuter service to Washington DC and are identified below.

*Virginia Railway Express (VRE*). VRE operates the Fredericksburg Line commuter rail service on Monday through Friday. Northbound service from Fredericksburg is provided via eight morning peak trips, one midday trip and two evening peak trips, and southbound service to Fredericksburg includes one morning peak trip, three midday trips and eight evening peak trips. FRED provides VRE feeder service to the train station.

*Greyhound:* In addition to FRED service, FRED Central is also home to Greyhound bus lines with several trips daily to Washington DC, Richmond and beyond. As previously mentioned, FRED is the local Greyhound agent.

*Commuter Bus Service*: Several private operators provide commuter bus service to Washington DC from Fredericksburg area commuter lots including park and rides located on Route 208, Plank Rd (Ukrop's), Gordon Rd, Route 17 (Warrenton Rd) and Route 630 West (Courthouse Rd). These service providers include Lee, Martz, and Quicks.

*GWRideConnect* is a free ridesharing service for commuters from Fredericksburg, Stafford, Spotsylvania, Caroline and King George Counties traveling to employment locations in Washington DC, Northern Virginia, Richmond, Dahlgren and other employment sites in the Fredericksburg area.

*Slug-lines:* Slug-lines are informal ridesharing arrangements, where commuters line up and wait for a ride to key destinations in the Washington DC area. In Fredericksburg, slug-lines are used at commuter lots on Route 3, Route 17 (Warrenton Rd.), and the north and south commuter lots in Stafford County.

*GRTC:* The GRTC Transit System in Richmond operates Route 96, the Richmond/Fredericksburg Express, with two morning and two evening trips between Brook & Parham, the Fredericksburg VRE Station, Route 208 Lot, Carmel Church, Ashland Junction and Downtown Richmond.

## 1.4 Fare Structure

FRED increased fares on the FRED fixed route deviation service and FREDExpress from $.25 to $.50 in July 2009. This was the first fare increase in 11 years. Additionally, FRED eliminated free transfers in 2007. Passengers making transfers pay the regular fare of $0.50 for each transfer. Fares for employees of major partners that contribute $25,000 or more are prepaid with proper ID. Currently, FRED's major partners include MediCorp Health System, University of Mary Washington, Star Radio Group, the Free Lance-Star and HCA Healthcare. Tables 1.4 and 1.5 show the FRED, FREDExpress and VRE Feeder Service fares.

**TABLE 1.4: FRED & FREDEXPRESS**

| Fare Category | Fare | Monthly Pass | Annual Pass |
|---|---|---|---|
| Adult-Regular Service | $.50 | $25.00 | $200.00 |
| Children Under 3 years | Free | Free | |
| Transfers | $.50 | | |
| MediCorp Health System | Free (with ID) | Free (with ID) | |
| University of Mary Washington | Free (with ID) | Free (with ID) | |
| Star Radio Group | Free (with ID) | Free (with ID) | |
| The Free Lance-Star | Free (with ID) | Free (with ID) | |
| HCA Healthcare | Free (with ID) | Free (with ID) | |

**TABLE 1.5: VRE FEEDER SERVICE**

| Fare Category | Fare |
|---|---|
| **VRE One-Way Single Fare** | $1.25 |
| **VRE-4-ticket Booklet** | $5.00 |
| **VRE Monthly Pass** | $40.00 |

## 1.5 Vehicle Fleet

FRED currently has a fleet of 31 vehicles, most of which are body-on-chassis buses with a useful life of five years. The FRED fleet includes five 13-seat vehicles, five 14-seat vehicles, four 19-seat vehicles, 11 20-seat vehicles and four 22-seat vehicles. Additionally, FRED has two larger purpose-built buses that seat 25 and 26 passengers. FRED has eight replacement vehicles on order that have a life expectancy of seven to 10 years. With the exception of the replacement vehicles on order, most of the FRED fleet is scheduled for replacement during the time frame of this TDP. Table 1.6 shows FRED's vehicle inventory and replacement schedule.

FRED service requires 22 revenue vehicles during its maximum period of service. This leaves FRED with nine spare vehicles and a spare ratio of 41 percent. However, 13 of FRED's vehicles are due for replacement in 2010, with eight vehicles on order. FRED intends to reduce the number of vehicles in its fleet from 31 to 30 with the next round of vehicle replacements. This will reduce FRED's spare ratio to 36 percent. Based on the reliability of new vehicles, FRED will evaluate reducing the fleet to 29 vehicles over the next two years. FRED does not operate a second demand response fleet. Rather, all FRED vehicles are equipped with wheelchair lifts and make route deviations by appointment.

**TABLE 1.6: VEHICLE FLEET INVENTORY & REPLACEMENT SCHEDULE**

| FRED Vehicle # | Seating Capacity | Date Delivered | Use | VIN | Projected Replacement Date |
|---|---|---|---|---|---|
| **713** | 13 | 12/10/1996 | Regular service | 1FDKE30F8THB68258 | FY2010 -- retired |
| **715** | 25 | 11/14/2002 | Regular service | 4LMKF5312WL000331 | FY2010 -- retired |
| **718** | 13 | 3/4/1999 | Regular service | 1FDWE30F8XHA48242 | FY2010 -- retired |
| **719** | 20 | 4/6/1999 | Regular service | 1FDXE40F7XHA41311 | FY2010 -- retired |
| **720** | 20 | 4/24/2000 | Regular service | 1FDXE40F8XHC23275 | FY2010 -- retired |
| **721** | 13 | 4/24/2000 | Regular service | 1FDWE30F9XHC06930 | FY2010 -- retired |
| **722** | 26 | 5/16/2001 | Regular service | SFD182AL4XGW13778 | FY2010 -- retired |
| **726** | 13 | 4/23/2002 | Regular service | 1FDWE35F52HA70071 | FY2010 -- retired |
| **716** | 13 | 3/18/1997 | Regular service | 1FDKE30F8VHA80765 | FY2011 |
| **730** | 19 | 3/10/2004 | Regular service | 1FDWE45F93HB90043 | FY2011 |
| **731** | 19 | 3/10/2004 | Regular service | 1FDWE45FX3HB90049 | FY2011 |
| **732** | 14 | 11/17/2004 | Regular service | 1FDWE45F93HB85604 | FY2011 |
| **735** | 14 | 11/17/2004 | Regular service | 1FDWE45F53HB85597 | FY2011 |
| **700** | 8 | 1/24/2002 | Pool Vehicle | 1FMPU16L02LA00894 | FY2012 |
| **728** | 19 | 3/10/2004 | Regular service | 1FDWE45F43HB90046 | FY2012 |
| **733** | 22 | 8/18/2004 | Regular service | 1FDWE45F53HB77614 | FY2012 |
| **734** | 22 | 8/18/2004 | Regular service | 1FDWE45F63HB85608 | FY2012 |
| **736** | 22 | 7/12/2006 | Regular service | 1GBE4V1206F424506 | FY2012 |
| **737** | 22 | 7/12/2006 | Regular service | 1GBE4V1266F424624 | FY2012 |
| **738** | 14 | 7/12/2006 | Regular service | 1GBE4V1216F424336 | FY2012 |
| **739** | 14 | 7/12/2006 | Regular service | 1GBE4V1246F424251 | FY2012 |
| **729** | 19 | 3/10/2004 | Regular service | 1FDWE45F23HB90045 | FY2013 |
| **740** | 14 | 7/1/2007 | Regular service | 1GDE4V1917F421006 | FY2013 |
| **741** | 20 | 7/1/2007 | Regular service | 1GDE4V1997F420878 | FY2013 |
| **742** | 20 | 7/1/2007 | Regular service | 1GDE4V1987F420886 | FY2013 |
| **743** | 20 | 7/1/2007 | Regular service | 1GDE4V1957F420909 | FY2013 |
| **744** | 20 | 7/1/2007 | Regular service | 1GDE4V1957F421011 | FY2013 |
| **745** | 20 | 7/1/2007 | Regular service | 1GDE4V1907F421031 | FY2013 |
| **746** | 20 | 7/1/2007 | Regular service | 1GDE4V1907F421059 | FY2013 |
| **747** | 20 | 7/1/2007 | Regular service | 1GDE4V19X7F420985 | FY2013 |
| **702** | 5 | 6/30/2009 | Pool Vehicle | 1FMCU59349KC82944 | FY2014 |
| **748** | 20 | 12/26/2007 | Regular service | 1GDE4V1948F401995 | FY2014 |
| **749** | 20 | 12/26/2007 | Regular service | 1GDE4V1958F402038 | FY2014 |
| **705** | 5 | | Pool Vehicle | 1FAHP3FN6AW205152 | FY2016 |
| **706** | 5 | | Pool Vehicle | 1FAHP3FN7AW150579 | FY2016 |

## 1.6 Existing Facilities

The Lawrence A. Davies Transit Center (FRED Central) is located at 1400 Jefferson Davis Highway. The City of Fredericksburg owns the facility, which houses the administrative offices and a transit center. The transit center has parking on site and parking rights for its employees at an adjacent church. FRED Central is ADA accessible.

FRED's maintenance facility is located at 400 Amaret Street. While FRED currently leases the facility, plans are underway to purchase it. The FRED fleet is stored and staged from this facility as well as FRED Central. FRED does not own a fueling center; rather, FRED uses Watchcard Fleet Fueling Service with fueling centers located throughout the service area.

In addition to FRED Central, FRED provides benches and shelters at various stops, such as the VRE Train Station. Table 1.7 provides an inventory of FRED's bus stop amenities.

**TABLE 1.7: FRED BENCH & SHELTER INVENTORY**

| Location | Item | Description |
|---|---|---|
| | | |
| **Altoona stop** | Bench | 8' heavy duty |
| **Train station** | Bench | 8' heavy duty |
| **Maintenance facility** | Bench (4) | 6' medium duty |
| **Jackson Street** | Shelter | Shelter |
| **DSS/Caroline** | Shelter | Shelter |
| **Caroline - Gov't building** | Shelter | Shelter |
| **Crestview Apartment** | Bench | 6' medium duty |

## 1.7 Transit Security Program

FRED is included in the City of Fredericksburg Emergency Preparedness Plan completed on 2007. Additionally, FRED drivers also go through periodic security training programs, drills and exercises.

FRED has installed security cameras and Automatic Vehicle Locators (AVL) on 18 FRED transit buses. FRED Central is also equipped with security cameras. FRED does not currently employ security officers for FRED Central or the maintenance facility. Access to the administrative offices at FRED Central is controlled by key cards.

FRED counts fares daily and matches them against the drivers' tally sheets. If there are significant discrepancies, an investigation is held. FRED fareboxes are manual and have windows so drivers can view the passengers' deposits. Generally, FRED drivers verify the fare before dropping the change/ticket into the lock box.

## 1.8 PUBLIC OUTREACH

FRED has a *Fare and Service Changes – Public Participation Policy* in place for fare increases and service changes that will result in elimination of a route, a 25 percent reduction in revenue miles on a route, or a 25 percent reduction in ridership. A summary of the policy is described below.

Thirty days prior to the implementation date of a fare increase or service decrease, FRED will publish the details of the proposed changes in general circulation newspapers of affected jurisdictions, on the City of Fredericksburg's website and on the FRED website. FRED will also post notices on all buses, FRED Central and public places, such as libraries. Notices include a description of the proposed changes, the proposed effective date of the changes, and the method by which the public may comment. When proposing fare and services changes, FRED will request public comments in writing and may also hold public hearings. Citizens are given 30 to 45 days from the date of the public notice to make comments prior to implementing any changes. If a public hearing is held, it will be held within two weeks of the public notice in the jurisdictions directly affected by the changes.

FRED will provide a summary of all comments received throughout the public participation process to the Public Transit Advisory Board (PTAB). The City of Fredericksburg will make any final decisions about fare increases based on comments made by the public, funding jurisdictions and the PTAB. Final determinations about service changes will be made jointly by the City of Fredericksburg and the jurisdiction funding the local share of the service. The public will be informed of the final decision through news releases, website postings, and postings on buses, in FRED Central and in select public buildings.

# 2.0 GOALS, OBJECTIVE & STANDARDS

This chapter presents the Fredericksburg Regional Transit (FRED) mission, identifies goals and objectives for the Transit Development Plan (TDP), and recommends a set of performance measures for the transit system.

## 2.1 FRED MISSION

In August 2009, FRED identified its mission as follows:

> Mission
>
> *It is the purpose of FREDericksburg Regional Transit (FRED) to provide accessible, affordable, dependable, efficient, environmentally sound, and safe and secure transportation for people who reside or work or visit within the Fredericksburg, Virginia region (i.e., the City of Fredericksburg and the counties of Caroline, King George, Spotsylvania and Stafford).*

## 2.2 TDP GOALS AND OBJECTIVES

FRED establishes goals and objectives annually with specific targets for the year. Building on FRED's current goals for FY2010 (July 2009-June 2010), this section presents the goals and objectives for the six-year TDP.

**Goal A: Provide a widely accessible public transit service to the region.**

Objective A.1 Investigate ways to make public transit more competitive with private means of transportation in terms of trip times, convenience (in the context of specific time-of-day and day-of-week trips), safety, cost to the individual user, and comfort.

Objective A.2 Investigate the needs of those who are underserved by the existing transit system.

Objective A.3 Investigate the needs of those in the region who are transit dependent.

Objective A.4 Publicize service to attract "choice riders" to the FRED system.

- Conduct "Ride FRED" seminars to educate the public on how to use the system.

Objective A.5 Continue to provide access to service, recreational, employment and tourist areas.

Objective A.6 Continue to work with local county governments to define needs and apply for funding for existing and additional service.

Objective A.7 Continue to work toward obtaining membership on the Fredericksburg Area Metropolitan Planning Organization (FAMPO) Policy Committee.

Objective A.8 Evaluate need for FRED stops and install stops at appropriate locations.

Objective A.9 Increase the availability of information about FRED's service through maps and schedules at all bus stops.

- Install new and improved bus stop signs throughout the system to include website, phone numbers and bus route numbers.

Objective A.10 Maintain and modify website as needed to make it more accessible for the visually impaired and user-friendly for FRED riders.

Objective A.11 Continue to work toward developing a maintenance facility at 400 Amaret Street.

**GOAL B: Provide an affordable public transit service to the region through funding by grants and contributions from local, state and federal funding entities and public/private partnerships.**

Objective B.1 Continue to use all funding opportunities to assist jurisdictions in the Fredericksburg region.

- Request federal and state funding in a timely manner.

Objective B.2 Continue to conduct annual review of fares and schedules.

Objective B.3 Continue to work toward increasing total Partnership/Marketing funding for FRED.

- Aggressively market "in-bus" advertising;
- Maintain current Partnership funding levels.

Objective B.4 Actively seek new Partners through the Public Transit Advisory Board's Partnership/Marketing Committee.

**GOAL C: Provide dependable transit service within the region.**

Objective C.1 Strive to maintain on-time performance of FRED service within the Fredericksburg region.

- Review record of on-time performance to determine possible schedule adjustments.

Objective C.2 Continue the process of review and improvement of service.

- Plan for and implement service adjustments by October of each transit year

- Conduct at least one survey of ridership annually to measure satisfaction with reliability and other aspects of service.

Objective C.3 Negotiate "Memorandum of Understanding" to be signed by localities.

Objective C.4 Continue to work toward improving FRED's preventive maintenance program by monitoring vendors and bringing most preventive maintenance efforts in house.

- Utilize software to develop a report of bus fleet records for dependability of the equipment to provide trouble-free service.

Objective C.5 Continue to replace buses within the fleet with more efficient buses.

Objective C.6 Conduct quarterly spot checks of bus fleet to ensure that drivers are fulfilling their responsibilities.

Objective C.7 Continue training drivers on the procedures they are required to follow.

**GOAL D: Increase the efficiency of the movement of people.**

Objective D.1 Implement performance monitoring program as described in Section 2.3 of this TDP to evaluate existing routes in terms of effecti**v**eness, such as passenger trips per revenue hour and revenue mile; efficiency, such as cost per trip and farebox recovery ratio; and quality, such as on-time performance, safety, and reliability.

Objective D.2 Promote FRED as a way to alleviate congestion within the Fredericksburg region.

Objective D.3 Continue to provide FRED service to major employment centers within the Fredericksburg region.

Objective D.4 Add a full-time Front Line Supervisor, Full time Account Clerk and Full time Mechanic to FRED staff.

Objective D.5 Implement a formal marketing plan with the assistance of the Public Transit Advisory Board's Partnership/Marketing Committee.

**GOAL E: Promote safety and security in maintaining and operating the FRED system to include personnel, ridership and facilities within the Fredericksburg region.**

Objective E.1 Continue to meet Americans with Disabilities Act requirements ensuring that drivers are properly trained to meet requirements of transporting persons with disabilities.

Objective E.2 Keep Continuity of Operations Plan (COOP) up-to-date and participate in emergency response exercises as required.

Objective E.3 Continue to monitor completion of warranty and change order items at new FRED Central.

Objective E.4 Seek compliance of bus stop design standards among all localities in the region.

- Circulate standards for bus stops, shelters, benches, pull-offs, etc. to FRED Partners.

Objective E.5 Continue to install shelters and/or benches at FRED stops

Objective E.6 Reduce the number of preventable vehicle accidents.

- Hold a minimum of two safety awareness meetings annually to be attended by all drivers;
- Continue the comprehensive safety training program for FRED employees.

Objective E.7 Increase passenger awareness of FRED's policy and rules for riding through recorded announcements and appropriate signage.

**GOAL F: Comply with state and federal policies and regulations.**

Objective F.1 Continue to attend state and federal training seminars to keep abreast of current regulations.

Objective F.2 Continue to foster positive working relationships with state and federal grant managers.

Objective F.3 Continue to complete reports required by the state and federal agencies.

Objective F.4 Continue to complete grant applications by required deadlines.

## 2.3 Service Performance Standards

Although FRED gathers data and utilizes best practices to evaluate performance, FRED does not have defined performance standards. FRED does review key performance measures annually in August in preparation for the annual budget. Additionally, FRED tracks the number of passengers, which provides an equivalent evaluation when revenue hours and revenue miles remain constant. This TDP recommends implementing several performance measures to gauge the efficiency, effectiveness and reliability of FRED's transit service.

Performance standards serve as a benchmark to guide the decision making process by revealing underperforming routes, as well as routes that could support additional service. Effective performance measures require complete and consistent data collection. Ideally, performance measures are collected and calculated on a route-level basis.

This TDP work effort recommends several performance measures and benchmarks based on a review of FRED's monthly ridership activity and actual operating costs from FY2009. These benchmarks use year

2009 data; thus, FRED should reevaluate benchmarks as needed based on current data and trends. FRED fixed route service is divided among the City of Fredericksburg, the counties of Spotsylvania, Stafford, King George and Caroline; as well as VRE Feeder Service and the UMW routes, FREDExpress. Where appropriate, performance measures have also been divided among these categories.

### 2.3.1 Ridership Service Productivity Measures

Ridership service productivity measures evaluate the effectiveness of the service. Recommended measures for FRED fixed-route service are based on annual averages of passengers per revenue hour and passengers per revenue mile. Table 2.1 shows the systemwide average for these measures for January 2009 through December 2009.

**Table 2.1: FRED Systemwide Ridership Service Productivity Measures (January - December 2009)**

| Performance Measures | System Average |
|---|---|
| Passengers/Revenue Mile | 0.6 |
| Passengers/Revenue Hour | 8.7 |

Because FRED routes vary in funding source and service area characteristics, the targets are broken into the following route groupings: City of Fredericksburg (F1, F2, F3, F4A, F4B, F5); Stafford County (D1,D2, D3, D4, D5, D6), Spotsylvania County (S1A, S1B, S2, S3); King George County (K1, K2); Caroline County (C1, C2A, C2B); VRE Feeder Service (VF1, VF2, VS1, VS2) and FREDExpress – UMW Routes (M1, M2, M3).

These benchmarks should be monitored annually. Corrective measures should be investigated if performance declines and could include service adjustments (frequencies, alignments and/or span of service), and measures to promote ridership (such as marketing efforts/promotions).

Passengers per Revenue Hour

The ratio of passengers per revenue hour is an industry wide standard that evaluates the impact of changes to revenue hours on ridership. FRED fixed-route service should maintain levels equivalent to or higher than the following benchmarks in Table 2.2.

**Table 2.2: FRED Passengers per Revenue Hour Performance Standards**

| Performance Measures | Fredericksburg | Stafford | Spotsylvania | King George | Caroline | VRE Feeder | FRED Ex |
|---|---|---|---|---|---|---|---|
| Pass/Rev Hr | 14.7 | 8.2 | 6.6 | 3.3 | 2.2 | 5.5 | 7.3 |

Passengers per Revenue Mile

Passengers per revenue mile relates to the passenger demand versus service supplied. FRED fixed-route service should maintain levels equivalent to or higher than the following benchmarks in Table 2.3.

**Table 2.2: FRED Passengers per Revenue Mile Performance Standards**

| Performance Measures | Fredericksburg | Stafford | Spotsylvania | King George | Caroline | VRE Feeder | FRED Ex |
|---|---|---|---|---|---|---|---|
| Pass/Rev Mi | 1.3 | 0.6 | 0.3 | 0.2 | 0.1 | 0.7 | 0.7 |

### 2.3.2 Cost Efficiency Measures

Cost efficiency measures reveal the efficiency and effectiveness of transit service as it relates to operating expenses. Changes in these measures indicate if a change in cost or demand is having a negative or positive impact on the service. The recommended cost-effectiveness measures for FRED fixed route service are the farebox recovery ratio and the operating expenses per passenger trip.

Farebox Recovery Ratio

The farebox recovery ratio measures farebox revenues as a percentage of operating expenses. Unless pursued as an explicit policy, a decrease in the farebox recovery ratio over an extended period of time warrants corrective measures. In 2009, FRED had a farebox ratio of 3.5 percent; however, this number is prior to the fare increase from $0.25 to $0.50. Based on FRED's budgeted fare revenues and operating costs for FY2010, the proposed benchmark for FRED's farebox recovery ratio is:

**6.6% farebox recovery ratio**

This calculation only includes revenues collected from the farebox and does not include partner funds. This standard should be monitored annually. Corrective measures could include fare increases, actions to promote ridership, and/or reduced service costs. With partner funds included, FRED's farebox recovery should be closer to nine percent in FY2010. FRED has adopted as a target a farebox recovery ratio of 12 percent for fares and partner funds combined, which is closer to the peer average of 15 percent.

Operating Cost per Passenger Trip

This measure reveals the operating costs per passenger trip. Changes in the ratio reveal the impact of operating costs on the level of service provided to FRED customers. Actual FY2009 operating costs from the FRED budget (minus capital outlays) and FY2009 passenger trips (July 2008 - June 2009) for the various jurisdictions are used to calculate this measure. This standard should be monitored annually. The systemwide average is $6.61 per passenger trip. However, because various jurisdictions provide funding for FRED service, targets are provided for various route groupings.

**Table 2.3: FRED Operating Cost per Passenger Trip Performance Standards**

| FY2009 | Fredericksburg | Stafford | Spotsylvania | King George | Caroline | VRE Feeder | FRED Ex |
|---|---|---|---|---|---|---|---|
| Op. Cost/ Pass. Trip | $3.32 | $7.30 | $4.36 | $16.17 | $26.74 | $21.22 | $7.53 |

Corrective measures should be investigated if the operating cost per passenger trip is higher than the benchmarks identified above. Corrective measures could include fare increases, additional state funding, additional financial contributions from FRED partners, and/or reduced service costs.

### 2.3.3 Reliability Measures

While service reliability data is difficult to collect and analyze, it can provide useful information for needed changes and improvements to service. Reliability can be measured objectively through on-time performance and subjectively with passenger surveys.

On Time Performance

On-time performance can vary substantially due to traffic conditions and other factors. On time performance can be measured through manual random checks of key timepoints or through the use of technology installed on buses. Buses departing from key timepoints up to one minute early to five minutes late will be considered "on-time". Buses departing outside of this time frame will be considered as early or late buses. The proposed benchmark for on-time performance is as follows:

**90% on-time departures during peak travel hours; and**
**95% on-time departures during non-peak travel hours and weekends.**

FRED currently measures on-time performance anecdotally and takes corrective action as necessary. The addition of GPS will provide FRED with a means monitor periodic samples of on-time performance. Corrective measures should be investigated as needed and could include adjustments to headways, layover times and/or running times.

Passenger Surveys

Quality of service measures provide valuable input on the customers' perception of the service, as well as the riders' transit experience. On-board surveys ask riders to rate the performance of the service, and can include questions relating to:

- **Days of Service;**
- **Hours of Service;**
- **Frequency of Service;**
- **Convenience of Routes;**
- **On-Time Performance;**
- **Travel Time; and**
- **Cost of Riding the Bus.**

Additional information can be obtained from these surveys, such as destination and origin locations, demographic information and transfer activity, which can provide a useful database of the transit system's target market.

FRED should continue to sample FRED riders annually to survey their opinions on the reliability and quality of service provided as viewed by FRED users.

# 3.0 Service and System Evaluation

As previously mentioned, FREDericksburg Regional Transit (FRED) provides fixed route transit service with deviations to the Fredericksburg Region on Monday through Friday, as well as three routes that center on the University of Mary Washington campus on weekends, and three VRE feeder routes that provide service during weekday commuting hours. Further description of the transit service provided by FRED is provided in Chapter 1 and Appendix A.

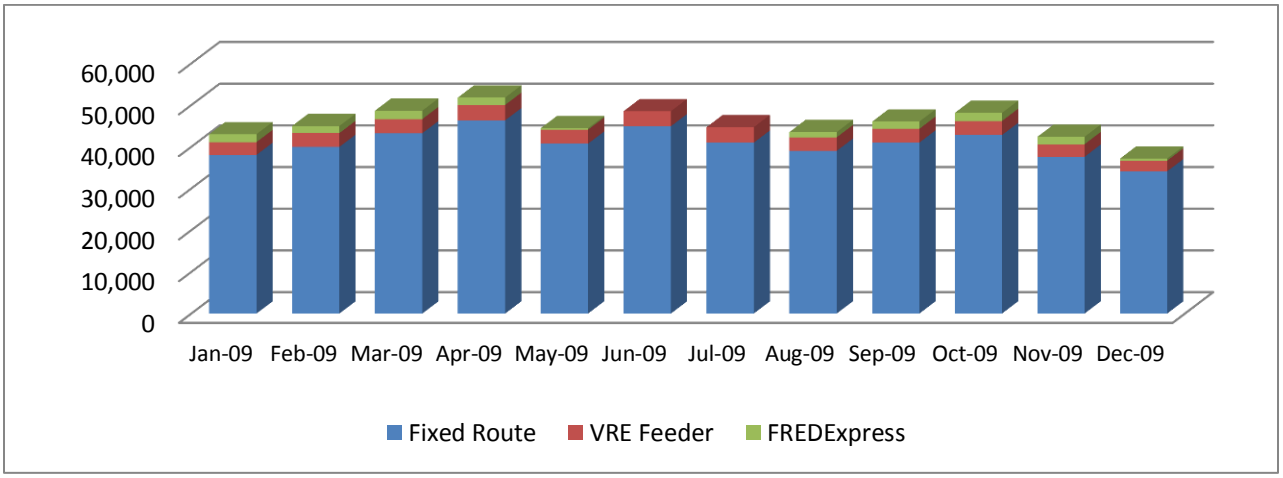
This chapter provides an evaluation of the existing service and includes an analysis of existing ridership, fare utilization, a historical performance evaluation over the past five years, peer review, onboard survey, public outreach efforts, facility and equipment characteristics, intelligent transportation systems, recent Title VI and Triennial Review, service area coverage, a land use summary and review of bicycle and pedestrian plans. The peer review and onboard survey findings are summarized in this chapter, with complete analysis located in Appendix B and C, respectively.

## 3.1 Existing Service Evaluation

The following is an analysis of the existing ridership for FRED fixed-route deviation service, FREDExpress and VRE feeder service. This analysis uses 2009 ridership data collected by FRED as well as data reported to the National Transit Database (NTD).

In 2009, 543,315 trips were taken on FRED service. This total includes all FRED fixed route service, deviation service, VRE feeder service, and FREDExpress service. Figure 3.1 shows FRED ridership by route type. Ridership was relatively steady throughout the year, with April, March and October showing the highest ridership, respectively. December 2009 had the lowest ridership of 37,163; however, a fare increase in July as well as holidays and weather delays likely contributed to a decrease in ridership in the second half of 2009. FREDExpress service only operates when UMW is in session; therefore, no ridership was recorded for June and July, and only partial months of ridership were recorded for May and August.

**FIGURE 3.1: 2009 MONTHLY RIDERSHIP**



FRED fixed route service is provided in several jurisdictions: City of Fredericksburg, Spotsylvania County, Stafford County, King George County and Caroline County. Additionally, FRED provides feeder service to the VRE train station and Thursday and Friday evening and weekend service via the FREDExpress with the financial support of the University of Mary Washington. Routes are named according to the jurisdiction the route serves. For example, Routes F1 through F5 serve the City of Fredericksburg and D1 through D6 serve Stafford County. Figure 3.2 shows the total ridership in 2009 by route type including fixed routes by jurisdiction, VRE Feeder and FREDExpress. Among the fixed route service, the City of Fredericksburg has the highest percentage of total ridership at 49 percent of the total, followed by Stafford County at 22 percent and Spotsylvania County at 13 percent as shown in Figure 3.3.

**FIGURE 3.2: 2009 ANNUAL RIDERSHIP BY ROUTE TYPE/JURISDICTION**

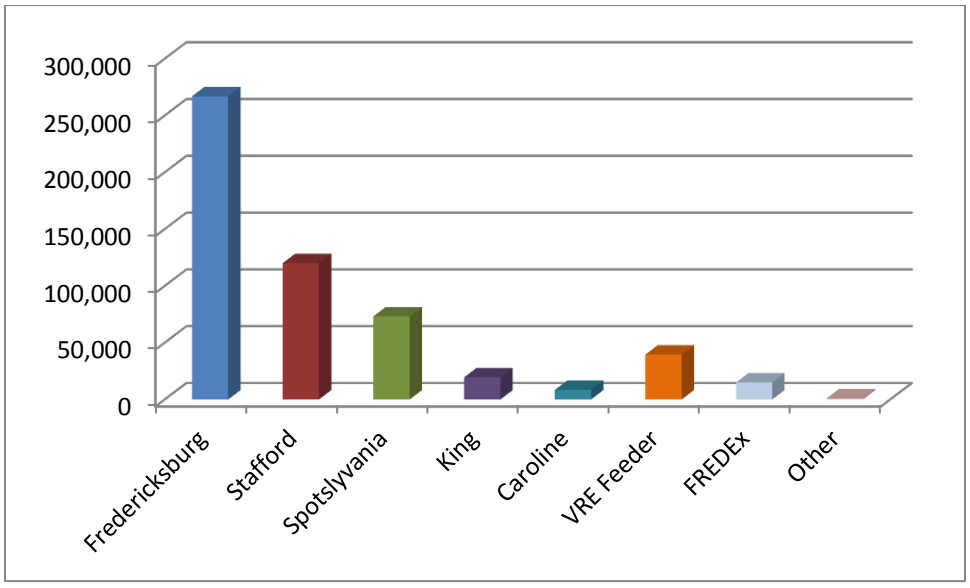



**FIGURE 3.3: 2009 PERCENTAGE OF TOTAL RIDERSHIP BY ROUTE TYPE/JURISDICTION**

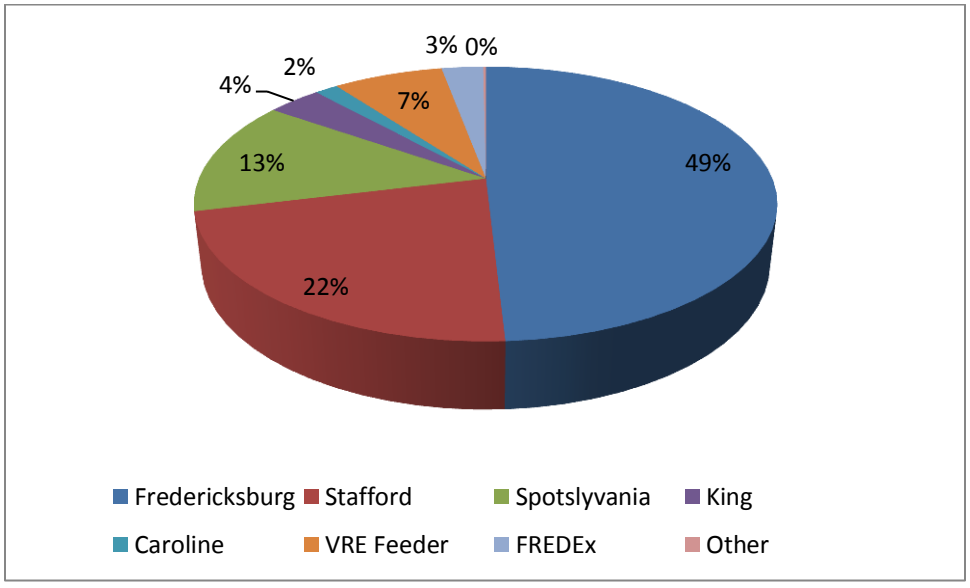


Figure 3.4 shows the total 2009 monthly ridership by route type. Ridership remains steady throughout the year for most of the route types, with the City of Fredericksburg and Stafford County routes showing modest peaks in ridership April, June and October. Figure 3.5 follows, which displays the total annual ridership by route. Individually, the top three routes in the system for total ridership are City of Fredericksburg Routes F1, F3 and F4. Table 3-X shows the total ridership by month for each route.

**FIGURE 3.4: MONTHLY RIDERSHIP BY ROUTE TYPE**

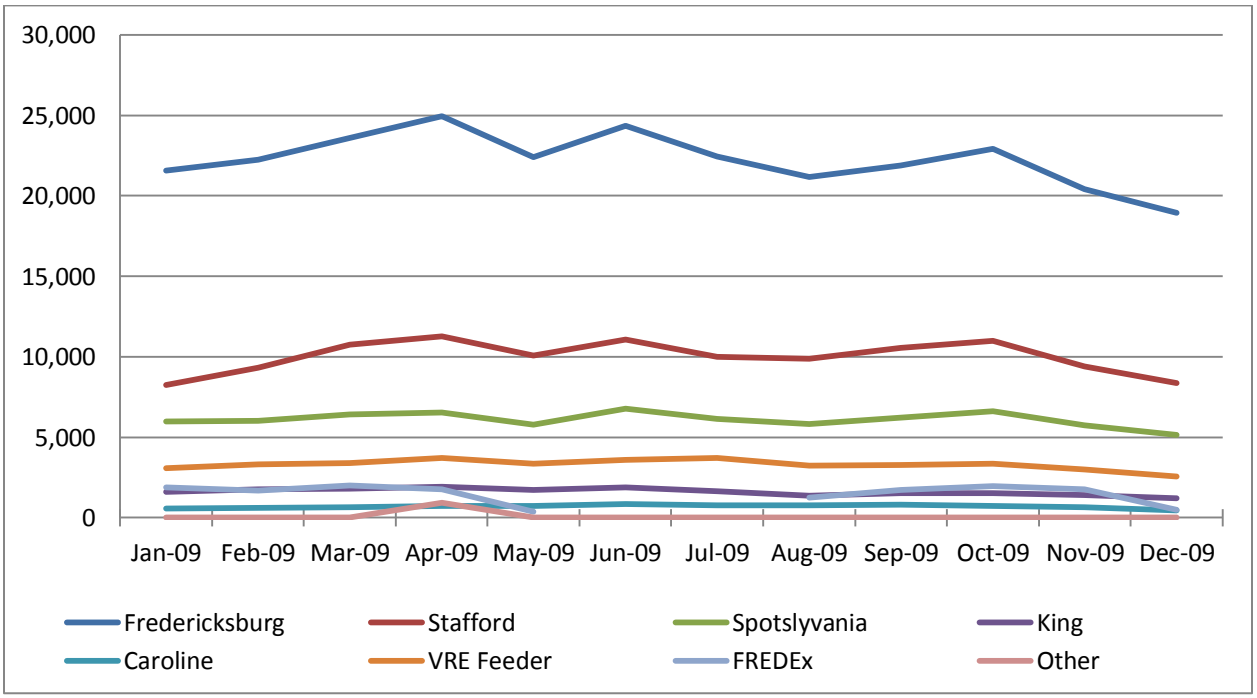
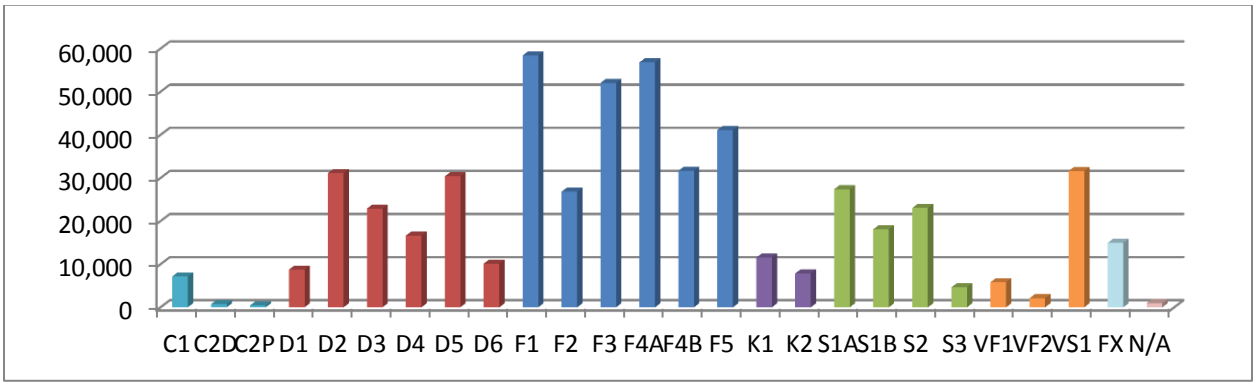



**FIGURE 3.5: 2009 ANNUAL RIDERSHIP BY ROUTE**



## TABLE 3.1: 2009 TOTAL MONTHLY RIDERSHIP BY ROUTE

| DATE | F1 | F2 | F3 | F4A | F4B | F5 | S1A | S1B | S3 | S2 | D1 | D2 | D3 | D4 | D5 | D6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Jan-09** | 4,926 | 2,075 | 4,144 | 4,285 | 2,418 | 3,732 | 2,230 | 1,455 | 376 | 1,931 | 681 | 2,133 | 1,401 | 1,127 | 2,116 | 805 |
| **Feb-09** | 4,929 | 2,175 | 4,337 | 4,594 | 2,456 | 3,751 | 2,140 | 1,506 | 387 | 1,989 | 797 | 2,295 | 1,558 | 1,408 | 2,274 | 993 |
| **Mar-09** | 5,091 | 2,540 | 4,428 | 4,996 | 2,632 | 3,911 | 2,371 | 1,631 | 397 | 2,024 | 730 | 2,524 | 2,064 | 1,579 | 2,754 | 1,105 |
| **Apr-09** | 5,553 | 2,600 | 4,645 | 5,284 | 2,922 | 3,953 | 2,443 | 1,584 | 382 | 2,123 | 926 | 2,653 | 2,090 | 1,535 | 3,011 | 1,066 |
| **May-09** | 4,912 | 2,059 | 4,174 | 4,919 | 2,775 | 3,577 | 2,130 | 1,403 | 357 | 1,896 | 744 | 2,526 | 1,996 | 1,365 | 2,557 | 896 |
| **Jun-09** | 5,316 | 2,357 | 4,547 | 5,431 | 3,149 | 3,536 | 2,664 | 1,753 | 428 | 1,938 | 836 | 3,019 | 2,220 | 1,698 | 2,399 | 894 |
| **Jul-09** | 4,773 | 2,148 | 4,476 | 4,970 | 2,892 | 3,183 | 2,431 | 1,552 | 394 | 1,751 | 705 | 2,821 | 2,078 | 1,536 | 2,177 | 694 |
| **Aug-09** | 4,588 | 2,236 | 4,339 | 4,575 | 2,384 | 3,056 | 2,210 | 1,384 | 373 | 1,873 | 699 | 2,695 | 2,043 | 1,303 | 2,469 | 675 |
| **Sep-09** | 4,635 | 2,332 | 4,607 | 4,655 | 2,640 | 3,006 | 2,231 | 1,535 | 400 | 2,040 | 782 | 2,784 | 2,025 | 1,394 | 2,689 | 898 |
| **Oct-09** | 5,053 | 2,376 | 4,490 | 4,918 | 2,683 | 3,411 | 2,456 | 1,631 | 422 | 2,089 | 691 | 2,990 | 2,103 | 1,412 | 2,917 | 860 |
| **Nov-09** | 4,419 | 2,069 | 4,047 | 4,245 | 2,469 | 3,148 | 2,168 | 1,377 | 441 | 1,754 | 503 | 2,492 | 1,803 | 1,148 | 2,721 | 732 |
| **Dec-09** | 4,216 | 1,852 | 3,807 | 3,947 | 2,263 | 2,838 | 1,921 | 1,289 | 292 | 1,630 | 670 | 2,221 | 1,513 | 1,140 | 2,307 | 515 |
| **Totals** | **58,411** | **26,819** | **52,041** | **56,819** | **31,683** | **41,102** | **27,395** | **18,100** | **4,649** | **23,038** | **8,764** | **31,153** | **22,894** | **16,645** | **30,391** | **10,133** |

| DATE | K1 | K2 | C1 | C2D | C2P | VS1 | VF1 | VF2 | FRED EX | OTHER | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Jan-09** | 895 | 730 | 501 | 59 | 29 | 2,394 | 528 | 138 | 1,899 | 0 | **43,008** |
| **Feb-09** | 968 | 814 | 509 | 73 | 20 | 2,549 | 587 | 165 | 1,698 | 0 | **44,972** |
| **Mar-09** | 903 | 896 | 576 | 56 | 29 | 2,754 | 509 | 124 | 2,017 | 0 | **48,641** |
| **Apr-09** | 989 | 927 | 628 | 78 | 36 | 2,988 | 510 | 199 | 1,752 | 917 | **51,794** |
| **May-09** | 884 | 838 | 624 | 56 | 35 | 2,749 | 438 | 159 | 368 | 12 | **44,449** |
| **Jun-09** | 1,008 | 872 | 727 | 61 | 49 | 2,955 | 438 | 217 |  | 26 | **48,538** |
| **Jul-09** | 1,114 | 529 | 678 | 46 | 44 | 3,008 | 512 | 176 |  | 0 | **44,688** |
| **Aug-09** | 940 | 411 | 638 | 94 | 36 | 2,548 | 522 | 172 | 1,254 | 0 | **43,517** |
| **Sep-09** | 1,070 | 474 | 678 | 65 | 68 | 2,610 | 474 | 208 | 1,738 | 0 | **46,038** |
| **Oct-09** | 1,018 | 513 | 642 | 77 | 33 | 2,616 | 513 | 244 | 1,947 | 18 | **48,123** |
| **Nov-09** | 933 | 486 | 555 | 63 | 25 | 2,415 | 413 | 176 | 1,782 | 0 | **42,384** |
| **Dec-09** | 821 | 382 | 396 | 35 | 33 | 2,029 | 377 | 144 | 495 | 30 | **37,163** |
| **Totals** | **11,543** | **7,872** | **7,152** | **763** | **437** | **31,615** | **5,821** | **2,122** | **14,950** | **1,003** | **543,315** |

## 3.2 FARE UTILIZATION

FRED tracks ridership based on several categories: regular adult riders, child, UMW ID, Medicorp I.D., wheelchair, medical stops and bicycles. Figure 3.6 shows the total percentage of ridership for each category from January 2009 through December 2009. The majority of FRED riders are regular adult fare or FRED pass holders, followed by 2.5 percent child fares. UMW riders make up 1.3 percent and medical stops account for 1.6 percent of the ridership.

**FIGURE 3.6: 2009 ANNUAL RIDERSHIP BY FARE CATEGORY**

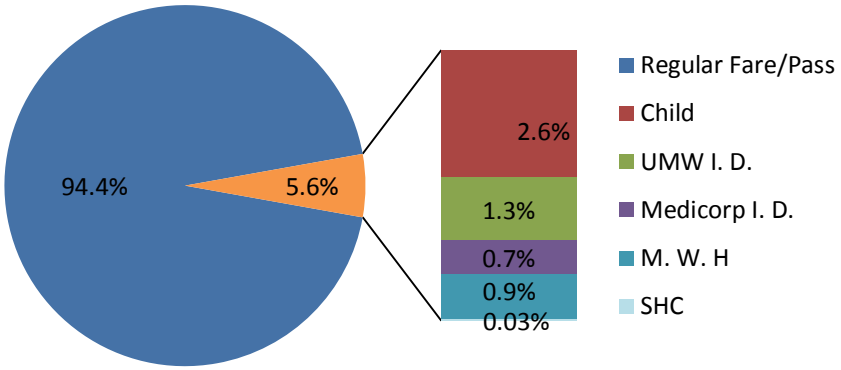
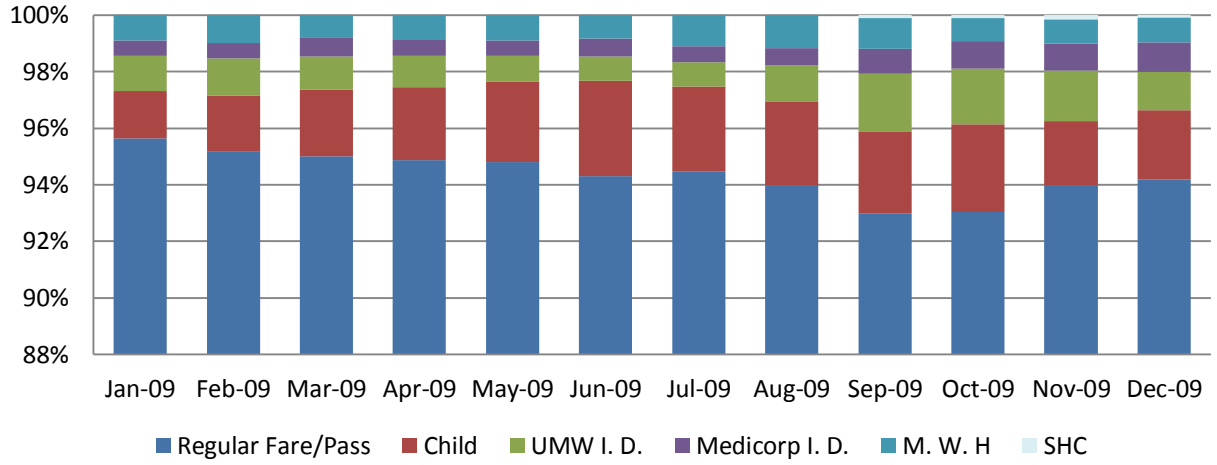



Figure 3.7 shows the monthly ridership by each fare category based on its percentage of total monthly ridership. While medical stops and Mary Washington Healthcare remain relatively steady throughout the year, the percentage of child riders and riders with bicycles increase in the summer months. As expected, UMW student ridership increases in September and October. FRED increased its fares in July 2009 from $0.25 to $0.50, and eliminated free transfers prior to the increase, which could account for lower percentages of regular adult ridership in the second half of 2009. Additionally, weather delays and cancellations in December, economic conditions and lower gas prices all impacted ridership in 2009.

**FIGURE 3.7: 2009 MONTHLY RIDERSHIP BY PERCENTAGE OF FARE CATEGORY**



## 3.3 Historical Performance Evaluation (Five Year Analysis)

This section evaluates performance standards based on data collected from the National Transit Database (NTD) over the past five years (2004-2008). Additionally, preliminary data for 2009 is included for comparison. These evaluation measures include service effectiveness, service efficiency, and cost effectiveness. Service effectiveness is measured as passengers per revenue hour and revenue mile, and service efficiency is operating costs per revenue hour. Cost effectiveness includes operating costs per passenger trip and passenger subsidy. Table 3.2 displays FRED's service data for the five year period, 2004 to 2008, as it is reported in the NTD. These numbers are not factored for inflation.

**TABLE 3.2: PERFORMANCE EVALUATION NTD DATA**

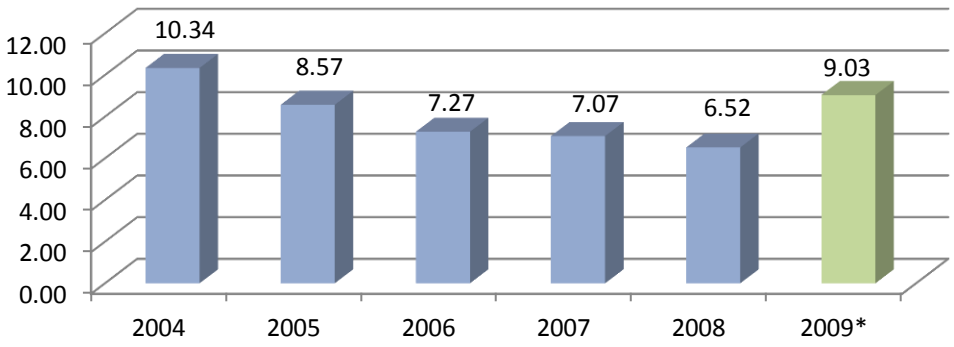
| Year | Passenger Trips | Revenue Hours | Revenue Miles | O&M Costs | Farebox Revenue |
|---|---|---|---|---|---|
| 2004 | 277,146 | 26,806 | 431,652 | $1,156,282 | 32,157 |
| 2005 | 328,724 | 38,362 | 589,710 | $1,440,682 | 45,830 |
| 2006 | 354,472 | 48,734 | 832,264 | $1,828,070 | 50,416 |
| 2007 | 361,838 | 51,186 | 889,839 | $2,396,950 | 54,963 |
| 2008 | 427,394 | 65,531 | 986,916 | $3,290,878 | 116,662 |
| *2009** | *559,699* | *61,948* | *984,596* | *$3,379,012* | *159,741* |

*Preliminary 2009 figures not reported in NTD

### Service Effectiveness

Service effectiveness is measured by the ratio of passenger trips per revenue hour. Figure 3.8 shows the passengers per revenue hour. From 2004 to 2005, the service effectiveness ratio decreased by 17.1 percent. From 2005 to 2006, the ratio decreased 15.1 percent; however, FRED revenue hours increased by 81.8 percent between 2004 and 2006. The addition of King George and N. Stafford routes likely contributed to this decrease. In 2007, the ratio only decreased by 2.8 percent with a 5.0 percent increase in revenue hours. This year also marked the addition of the UMW shuttle and VRE Feeder service. In 2008, passenger trips per revenue hour decreased 7.7 percent with a 28 percent increase in revenue hours, with the addition of the Spotsylvania County Route S3. As preliminary numbers in 2009 reveal, FRED's passenger trip per revenue hour increased 38.5 percent to 9.03 passengers per revenue hour.

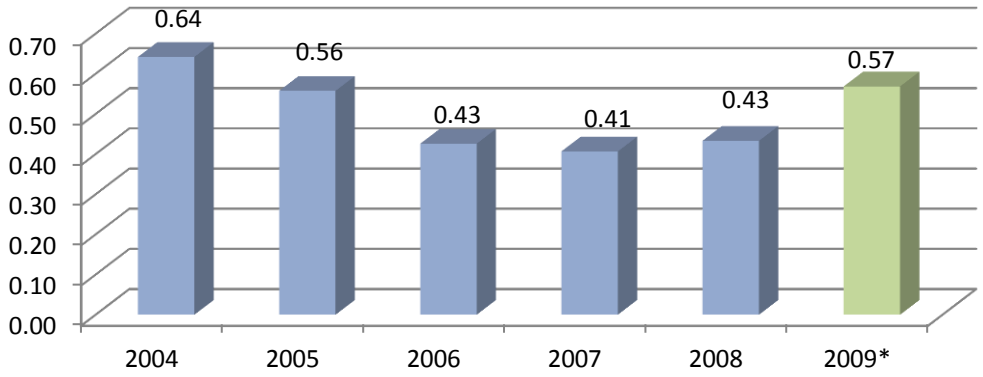
**FIGURE 3.8: PASSENGER TRIPS PER REVENUE HOUR**



### Passengers per Revenue Mile

The ratio of passengers per revenue mile is another metric that reflects service productivity. Figure 3.9 presents riders per revenue mile. The number of passengers per revenue mile decreased between 2005 and 2007 by 13.2 percent in 2006 and 23.6 percent in 2007. During this time revenue miles increased 36.6 percent and 41.1 percent, respectively. In 2007, this measure only decreased by 4.5 percent and increased by 6.5 percent in 2008. Again, the addition of new routes increased the total revenue miles. Preliminary numbers in 2009 reveal an increase in this ratio by 31.3 percent to .57, similar to 2005 levels.

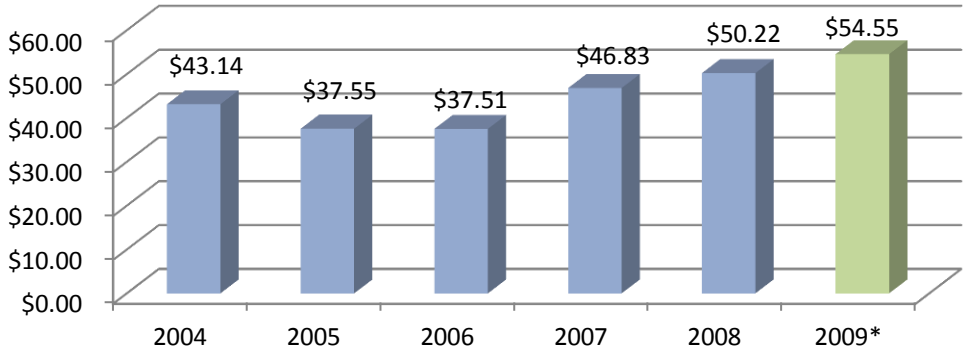
**FIGURE 3.9: PASSENGER PER REVENUE MILE**




### Service Efficiency

The ratio of operating costs per revenue hour provides an overview of how efficiently the service is operating. Figure 3.10 shows the operating costs per revenue hour for the years 2004 to 2008. Again, these numbers do not reflect inflation. From 2004 to 2005, the cost per revenue hour decreased 12.9 percent, and flattened in 2006 with a 0.1 percent decrease. The cost per revenue hour increased 24.8 percent from 2006 to 2007 and 7.2 percent in 2009, for a total increase in cost per revenue hour of 16.4 percent between 2004 and 2008. Between 2007 and 2008, FRED underwent a salary review and adjustment that impacted the cost. Additionally, rising fuel costs and an aging fleet all factor into the ratio. In 2009, the cost per revenue hour was $54.55. This is due to the reduction in service hours that was not significant enough to reduce the administration costs to operate the service.

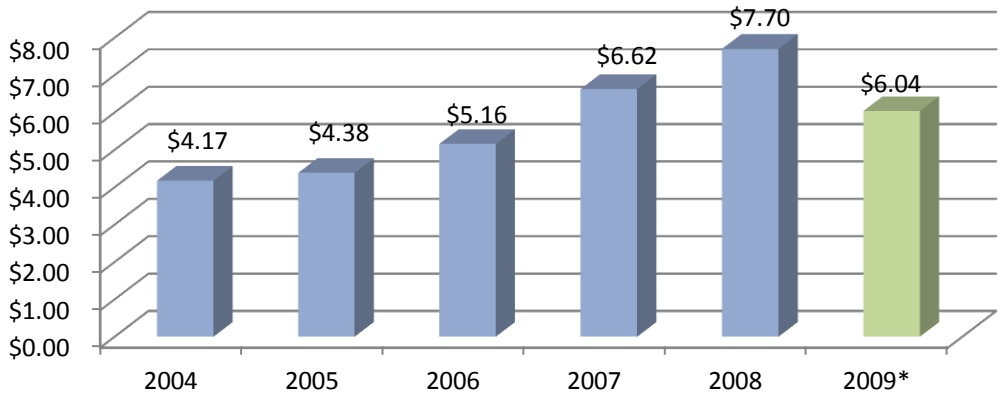
**FIGURE 3.10: O&M COST PER REVENUE HOUR**



### Cost Effectiveness

The ratio of operating costs per passenger trip reveals how effectively the agency is providing the service. As shown in Figure 3.11, FRED's cost per passenger trip increased by 84.6 percent. Although costs have increased, a steady increase in ridership kept this ratio relatively stable from 2004 to 2006. In 2007 and 2008, the cost per passenger trip increased by a larger margin, by 28.4 percent and 16.2 percent, respectively. From 2004 to 2008, FRED operating costs increased 184.6 percent. Again, salary adjustments and economic conditions factor into this ratio. Inflation is not factored into these figures. In 2009, the operating cost per passenger trip went down 21.6 percent to $6.04.

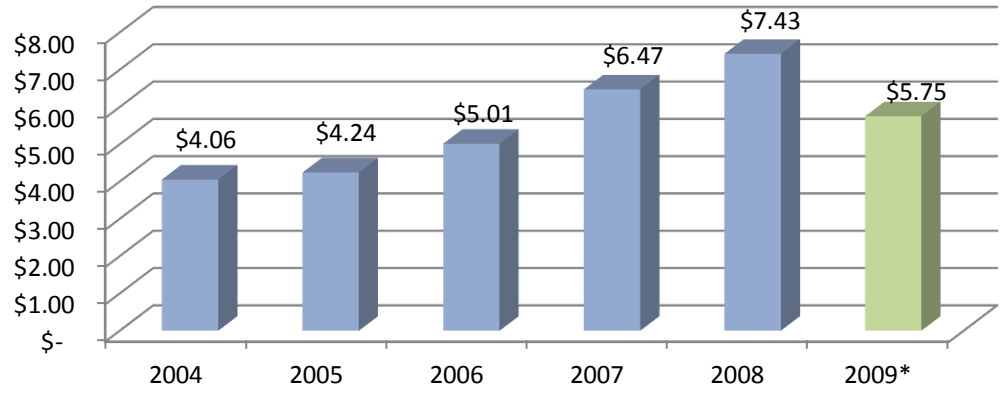
**FIGURE 3.11: OPERATING COSTS PER PASSENGER TRIP**




### Subsidy per Passenger Trip

Subsidy per passenger trip measures the true cost of a passenger trip to FRED jurisdictions. This figure is the operating cost minus the fare revenue as reported to the NTD per passenger trip. The subsidy per passenger trip has increased 83.1 percent from 2004 to 2008, with the greatest increase from 2006 to 2007 at 29.1 percent. Fare policy changes in 2009 should be reflected by a decrease in this subsidy in 2010, and is evident in the preliminary 2009 subsidy per passenger trip of $5.75, a 22.6 percent decrease, as shown in Figure 3.12.

**FIGURE 3.12: SUBSIDY PER PASSENGER TRIP**



## 3.4 Peer Review

As part of this TDP process, a peer analysis compares performance measures for FRED with five peer systems that have similar operational size, service area and demographics to gauge where deficiencies may occur and improvement may be warranted. FY2008 data from the National Transit Database (NTD) is used to compare the transit systems. The complete peer analysis is found in Appendix B. A summary of the peer analysis follows.

While the peer analysis does not capture all of the unique characteristics found in Fredericksburg, it does provide a basis for comparison to evaluate the performance of the system. Numerous transit systems were reviewed to determine a reasonable peer group relative to FRED. For this analysis, Williamsburg Area Transport (WAT) provides the best comparison in Virginia. WAT is unique, however, as they report their fixed routes as directly operated service and Colonial Williamsburg Foundation (CWF) routes as purchased transportation to the NTD. The CWF routes serve a unique seasonal tourism and temporary worker population, and are funded by the Colonial Williamsburg Foundation (CWF). In order to provide the best comparison between Fredericksburg and Williamsburg, the data used in the peer analysis does not include the CWF purchased transportation data.

In addition to Williamsburg, VA, two cities in Maryland are included in the final peer list. Annapolis Transit (AT) provides some fixed route deviation service and connects to a larger urbanized area, Baltimore. Charles County (VanGO) is selected because the service area population and geography are similar to Fredericksburg. Monongalia County Urban Transit (Mt. Line Transit) in Morgantown, West Virginia, shares similar service characteristics; although, it does have a large student population from the University of West Virginia. Finally, Middletown Transit District (MTD) in Connecticut shares the same population density and is centrally located between two urban areas with connections to Amtrak rail service. While every attempt is made to choose similar peer densities, service area square miles and population are provided by each jurisdiction to the NTD, and thus, methods of measurement may vary. The results of the final peer selection are displayed in Table 3.3.

**TABLE 3.3: FINAL PEER SELECTION**

| Transit Agency | Location | Service Area | | Total Peak Vehicles |
|---|---|---|---|---|
| | | Sq. Miles | Pop. | |
| Williamsburg Area Transport (WAT) | Williamsburg, VA | 144 | 57,000 | 24 |
| Annapolis DOT (Annapolis Transit) | Annapolis, MD | 100 | 90,000 | 18 |
| Monongalia County Urban Transit (Mt. Line Transit) | Morgantown, WV | 201 | 73,278 | 27 |
| Middletown Transit District (MTD) | Middletown, CT | 193 | 90,320 | 15 |
| Charles County (VanGO) | Charles County, MD | 458 | 120,564 | 27 |
| **Peer Average** | | **219** | **86,232** | **22** |
| *FREDericksburg Regional Transit (FRED)* | *Fredericksburg, VA* | *242* | *113,716* | *22* |

The following summarizes the key findings for each performance measure identified in the peer analysis.

- *Vehicle Utilization:* FRED is within range of the peer system average for number of vehicles available and vehicles operated for maximum service. FRED's revenue miles and revenue hours per peak vehicle are only slightly higher than the peer average, at 110 percent and 111 percent respectively. As these ratios increase, it indicates a more intense use of the vehicles; however, it can also lead to more wear and tear on the vehicles and thus impact reliability. Based on the peer systems, FRED is efficiently using the vehicles available.
- *Service Supplied:* FRED's revenue hours and revenue miles per service area population and service area square mile are lower than the peer average in all four categories. FRED supplies 84 percent of the peer average in revenue hours per person, 81 percent of the peer average in revenue miles per person, 82 percent of the peer average in revenue hours per square mile, and 84 percent of the peer average in revenue miles per square mile. Because FRED's population and service area are larger than many of the peer systems, there are likely portions of the service area that are underserved based on the peer systems' ratios.
- *Service Productivity:* FRED was lower than the peer average for all three service productivity measures; passenger trips per service area population (37%), passenger trips per revenue hour (46%), and passenger trips per revenue mile (45%).
- *Cost Efficiency:* FRED has a higher cost per passenger trip compared to the peer average (146%); however, FRED's cost per revenue hour and revenue mile is lower than the peer average. This indicates that while FRED may be operating FRED service in a cost efficient manner; FRED's passenger subsidy is much higher than the peer agencies. Although FRED is a cost effective operator, it is a less than cost effective trip provider. This may be due to the large number of hours and miles FRED operates in King George and Caroline Counties, both of which are sparsely populated.
- *Revenue Vehicle Maintenance Performance:* FRED has 214 percent more vehicle failures per 1,000 miles than the peer average; yet, vehicle age, make and maintenance policies can directly impact these results. Additionally, agencies may report maintenance performance differently, thus reducing the reliability of the information available for maintenance. With a large fleet of vehicles with a five-year life span, compared to other vehicles that may have a 10-year life span, the life of FRED's fleet may be shorter than the peer systems.
- *Farebox Revenues:* FRED has the lowest farebox revenue ratio among all of the peer systems at 3.5 percent. The elimination of free transfers and a fare increase in July 2009 should mark a rise in this ratio in the future.
- *Source of O&M Funds:* FRED relies heavily on federal sources for operating funds, with local contributions providing the lowest percentage behind fares at 9.8 percent. New census data in 2010 may impact the level of funding FRED receives, resulting in the need for a larger local share.
- *Source of Capital Funds:* Eighty percent of FRED's capital funds came from federal sources and 12.6 percent came from local sources. As grants expire and FRED service expands, capital funding may become a challenge in the future.

## 3.5 On Board Survey Findings

An on-board survey was conducted in March 2010 as part of this TDP effort to be used in the service evaluation process. The survey included questions about origin and destination as well as rider characteristics. All FRED routes were surveyed from the beginning to end of service with a few exceptions during the week of March 15 through March 20, 2010. Table 3.4 shows the number of hours each route was surveyed as a percentage of the routes' revenue hours. This section summarizes the results of that survey, with a complete discussion of the survey and results provided in Appendix C.

**TABLE 3.4: PERCENTAGE OF REVENUE HOURS SURVEYED BY ROUTE**

| Route | Survey Hrs | Revenue Hours | % of Rev. Hrs |
|---|---|---|---|
| **F1** | 10 | 11 | 91% |
| **F2** | 13 | 13 | 100% |
| **F3** | 13 | 13 | 100% |
| **F4** | 22 | 22 | 100% |
| **F5** | 12 | 12 | 100% |
| **C1/C2** | 14.4 | 13.9 | 100% |
| **D1** | 10 | 10 | 100% |
| **D2** | 12 | 12 | 100% |
| **D3** | 10 | 11 | 91% |
| **D4** | 7 | 7.67 | 91% |
| **D5** | 12 | 12 | 100% |
| **D6** | 4.5 | 4.5 | 100% |
| **K1** | 12 | 12 | 100% |
| **K2** | 4 | 4 | 100% |
| **S1** | 20 | 20 | 100% |
| **S2** | 12 | 12 | 100% |
| **S3** | 12 | 12 | 100% |
| **VF1** | 2.7 | 2.7 | 100% |
| **VF2** | 2.7 | 2.7 | 100% |
| **VS1** | 2.5 | 2.5 | 100% |
| **VS1** | 2.5 | 2.5 | 100% |
| **M1** | 6 | 13 | 46% |
| **M2** | 12 | 16 | 75% |
| ***Total*** | *228.3* | *241.5* | *95%* |

## Surveys Completed

A total of 982 surveys were returned, which is 44 percent of the average daily ridership during the dates of the survey. The following Figure 3.13 shows the total number of responses by route. Figure 3.14 shows the survey response rate by route based on the daily ridership counts during the week of the survey. Route F5 had the lowest response rate, with only 19 percent of the riders responding to the surveys. Surveyors commented that many of the passengers filled out a survey on a previous route and would not fill out another.

**Figure 3.13: Total Surveys, By Route**

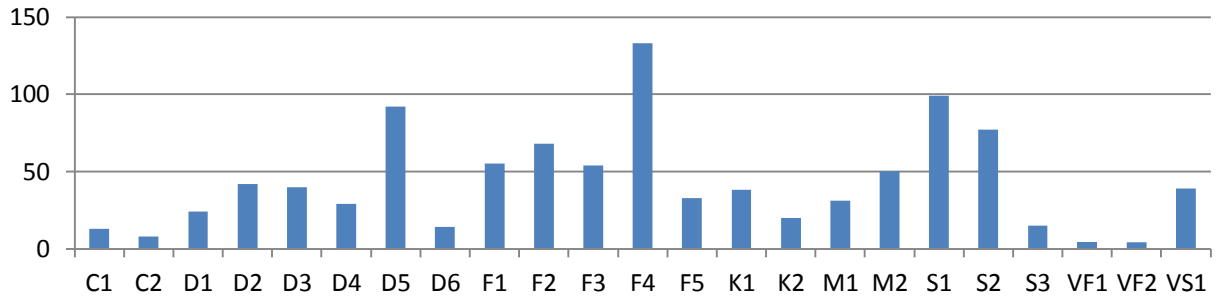
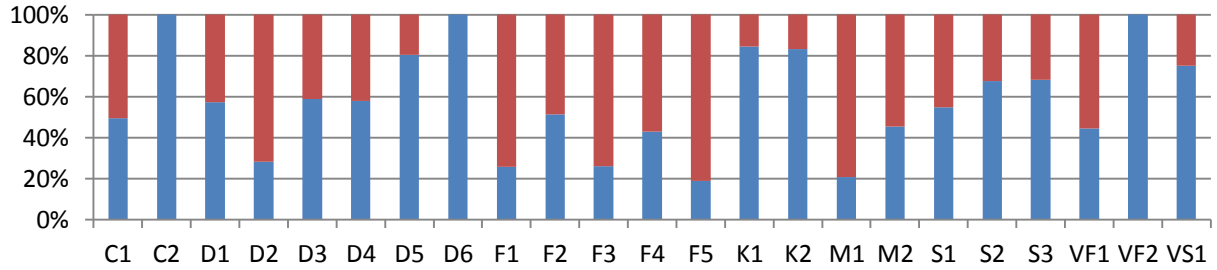



**Figure 3.14: Survey Response Rate, by Route**



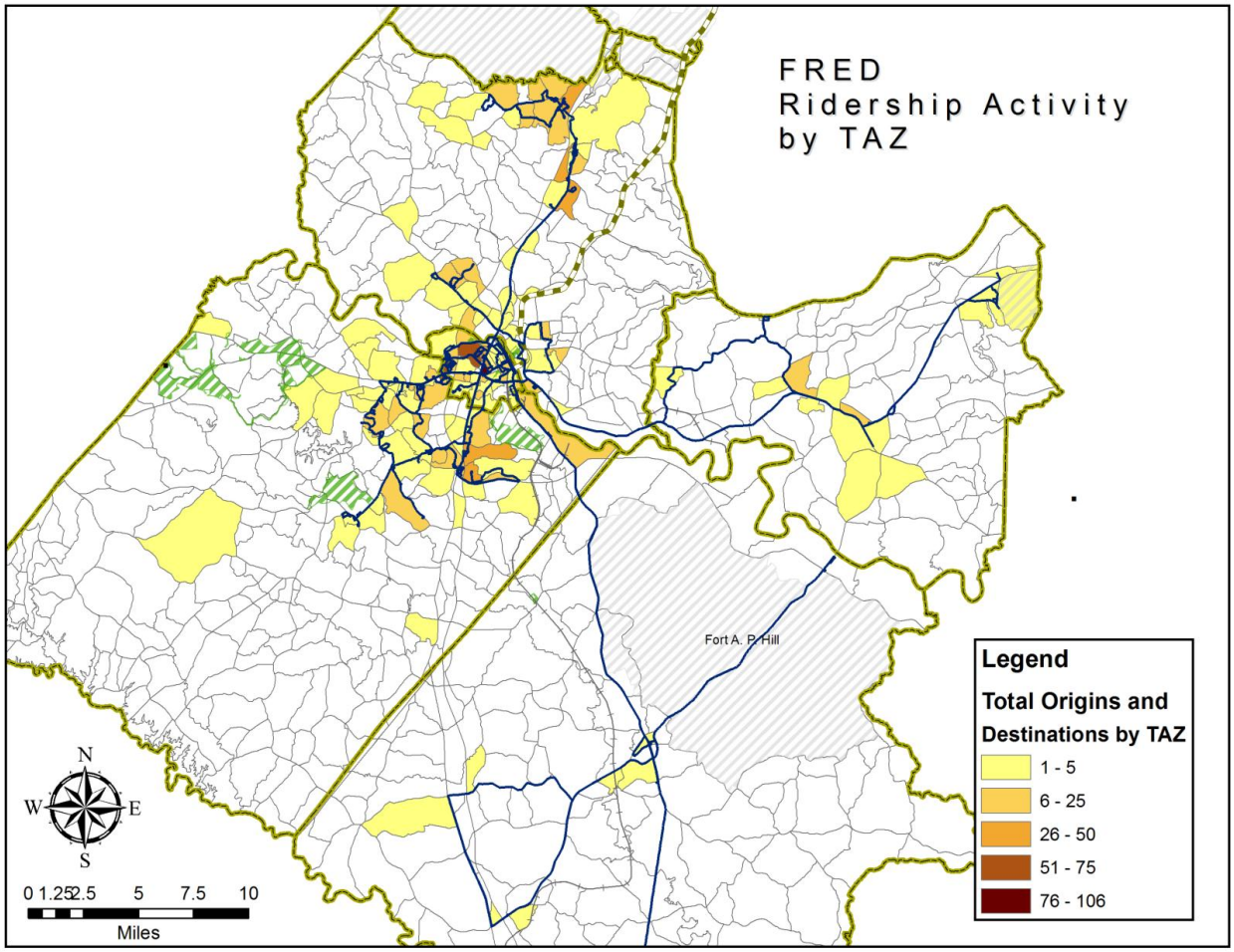

## Summary of Results

The onboard survey included three sections of questions, I. Tell Us About Your Trip, II. Tell Us About Yourself, and III. Tell Us How We Can Make FRED Better. Section I asks questions about the trip, such as origin and destination with specific addresses, bus transfers, mode of access to the bus stop and destination, as well as how often the respondent rides FRED service. Section II asks key demographic and socioeconomic questions, such as number of vehicles in the household, whether the passenger has a valid driver's license, gender, employment status, age, household income and English as a second language. Section III includes an open question where passengers fill in their comments. The following is a brief summary of the Section I and II of the survey. A full analysis of all questions and comments are in Appendix C.

### Trip Purpose

Most FRED riders on regular weekday service are making trips originating from home (47%) and traveling to work (25%); however, most FREDExpress riders are starting at home (44%) and ending their trip at shopping destinations. Origin and destination locations for FRED riders are identified in a series of maps in the appendix. Figure 3.15 shows total origins and destinations by TAZ.

FIGURE 3.15: TOTAL ORIGINS AND DESTINATIONS BY TAZ




Approximately 30 percent of FRED fixed route passengers overwhelmingly make a transfer to or from another bus and most wait 10 minutes or less for their transfer. FRED riders walk to their bus stop (78%) and walk to their destination (76%) after getting off the bus. Riders on VRE Feeder service almost all drive and park a car prior to boarding FRED. Most riders only walk zero to three blocks to their bus stop or destination. Finally, a majority of FRED riders use the service four or more days per week (54%).

**Rider Demographics**

While the trip purpose among the various route types do not vary as much, the FRED fixed route rider is a different rider than those who use FREDExpress and the VRE Feeder service.

The FRED fixed route rider is highly dependent on the transit service for mobility. Fifty-seven percent have no access to a vehicle and 61 percent do not have a valid driver's license. Fixed route riders are equally split between females and males, are mainly between the ages of 40-59 (36%) and 25-39 (31%). Fixed route riders are employed full-time (34%), part-time (18%) or unemployed (27%). Half of the fixed route riders come from a household with incomes of less than $20,000 a year. Finally, 16 percent do not speak English as their primary language.

Although the FREDExpress service is centered on the University of Mary Washington, it is available to the general public as well as UMW students and staff. Most UMW student riders are freshmen who are not permitted to have automobiles on campus. Thus, most FREDExpress riders do not have access to a vehicle (72%), and 54 percent do not have a valid driver's license. FREDExpress riders are 59 percent female and are younger than the fixed route riders, between the ages of 19-24 (32%) or 25-39 (26%). Thirty-three percent of FREDExpress riders are unemployed and 23 percent are college/university students. Most FREDExpress riders earn less than $20,000 a year (59%). Twenty-one percent of FREDExpress riders speak English as a second language.

Almost all passengers on the VRE Feeder Service have access to a vehicle, with many having access to two vehicles in their household (39%); all have a valid driver's license. Riders are 61 percent male and age 40-59 (76%). All of the riders on VRE Feeder Service are employed full time and a majority (54%) earns $80,000 or more. Finally, 18 percent of these riders speak English as a second language.

## 3.6 Public Outreach Efforts

In order to solicit input from users and non-users of FRED transit service, several public outreach efforts were conducted throughout the TDP process. FRED Supervisors and bus operators provided frontline input as the eyes and ears of the system. In addition to meeting with FRED staff, a meeting with the members of the Public Transit Advisory Board was held on February 3, 2010. Passenger Focus Groups were conducted on May 4th and 5th at various transfer locations throughout the service area. A meeting with FAMPO staff on July 6, 2010 provided added insight for the needs assessment conducted in Chapter 4 of this TDP.

Two meetings with the Core Drivers Group and FRED Supervisors were held on February 2, 2010. The Core Drivers Group meets quarterly and includes four experienced drivers and FRED staff. The second meeting with FRED Supervisors included the training supervisor and three part-time dispatchers/supervisors. Topics included in the discussion were FRED Service, transfer locations, bus stops, fleet and facilities, fares, schedules/information, and technology. The following summarizes the topics for discussion.

### Service

- **Hours:** Drivers and supervisors discussed the hours of FRED services, stating that earlier service is needed, as passengers express a need to be at work at 7:30 a.m. It was recommended that buses start at 5:30 a.m. similar to VRE service. Additionally, later service to accommodate work shifts is needed. Weekend service was also discussed. Saturday service is needed for those who work in shopping areas for all work shifts, such as Central Park or Stafford Market Place. Also, weekend service is warranted to Massaponax, Cosner's Corner and the DMV.
- **Frequency**: Drivers stated more frequent service is needed in the morning (until 11 a.m.) and in the evening (2 p.m. - 9 p.m.). Frequency increases should be in heavily populated areas, such as close in Spotsylvania County and the City of Fredericksburg. Additionally, holding buses at the transit center more than the five-minute policy was reported as an issue; which could be eliminated with more frequent service.
- **Deviations**: Drivers and supervisors also discussed the route deviations. Their comments identified a number of challenges presented by the service. Deviations to Lake Land'Or in Caroline County are more than the ¾ mile buffer, making it difficult to stay on schedule. This area was grandfathered when the fixed route was moved out of the community. No shows also cause problems with deviations; the policy is to deny further deviations to riders with three no shows. Systemwide, FRED service includes approximately 3,000 deviations per year and 1,000 wheelchair lifts. Route S2 has the most deviations. FRED gets more requests for deviations than they actually provide, and will turn deviations down when the schedule is stretched too thin. All schedules are constructed with 10-15 minutes of "slack" to allow for traffic delays and deviations.
- **Schedule**: Drivers and supervisors stated that deviations can throw the route off schedule. Additionally, some timepoints are in locations where the bus cannot wait. Routes with specific schedule issues include K2, S2, K1, and D2. When deviations occur on Warrenton Road/17 near Celebrate, VA, the runtime is tight. Also, the F4 can be held up in Central Park.

- **Route Specific Comments**: Comments specifically focused on individual routes were as follows:
  - S2 – A second bus is needed to operate on a one-hour frequency. The route should travel in both directions or be split into two routes.
  - S3 - This route should be modified to serve Cosner's Corner and the new hospital. This route is a CMAQ demonstration route with one year left.
  - FREDExpress – Many of the weekend riders are not students.
  - F2 – No one rides the F2, there is a lack of residential areas on this route.
  - S2 and S3 – These routes should run more than every other hour, as they serve major social services.

### Transfer Areas

- **Lee's Hill Center**: Drivers' mentioned congestion at the Lee's Hill transfer location, when cars are coming and going to and from work, as well as large trucks parking in the area. Some suggested that Cosner's Corner would be a better transfer location, as well as add a connection to the S3. Currently, Cosner's Corner has bus pullouts sized for one vehicle, but it is not served. Other suggestions included the Golden Corral parking lot and the former Gallahan's Furniture location.
- **Stafford Market Place (North Stafford):** Drivers felt the Stafford Market Place transfer location was working; however, a shelter is needed.
- **Satellite Transit Center**: A discussion was held on the need for satellite transit centers that included amenities for drivers as well as shelters/benches for passengers. One recommended location was the vacant land next to Blooms in Lee's Hill Center. The Stafford Courthouse was another suggested location for a satellite transit center.

### Bus Stops

Drivers and supervisors expressed the need for shelters at the following locations: Lee's Hill Center, the Holbert Building, Stafford Market Place, Stafford Court House, and the Walmarts in Central Park and Stafford. Drivers stated the Central Park Walmart needs an allocated area for a bus stop that is "bus only" and needs a cutout. Drivers mentioned the bus stop on Route 1 by Drew Middle School/Manning Drive as needing a safer stop. FRED Drivers and supervisors stated that many signs have the wheelchair symbol, but not all are appropriately equipped with pads, etc.

### Fleet/Facilities

In the discussion about the fleet and facilities, staff expressed the need for cleaning facilities and other equipment to do more in-house. Supervisors stated dispatch works well being centrally located with the drivers. Operators and staff noted that bigger buses may make it clearer that FRED is a "real" bus system, and may be beneficial on in-town routes and Central Park. However, the current vehicles are sufficient for the service FRED provides. Many of the in-town routes have occasional standees including the F5, F1, F4, and F3. Drivers also noted that the steps are difficult for elderly or disabled passenger to climb. Supervisors and operators agreed that bus maintenance and vehicle reliability has improved since starting in-house maintenance in late 2008.

### Staffing Needs

The operators and supervisors stated that the training provided is good; and FRED is open to drivers learning new routes. Improvements could be made with more "under the hood" training, as well as a training bus and training room with a more formalized setup. Supervisors have many roles including dispatch, customer service, monitoring security cameras, station security, etc. All front line supervisors are part-time positions, which is difficult for scheduling and employee morale. The following staffing needs were expressed by FRED supervisors:

- A maintenance mechanic for a pm shift;
- Dispatchers that focus solely on buses;
- A central communication source for customer service with a person dedicated to answering customer service calls;
- Security Officer;
- A recognition/reward program for drivers;
- Full-time positions;
- Data entry person;
- Field Supervisors ; and
- Ghost riders to ride and evaluate the routes.

### Schedules/Information

Drivers mentioned the need for a better system of providing schedules on the buses as well as one primary schedule that includes all routes and system information. Rider education and schedules that are easier to read are also needed. Drivers noted that many passengers have trouble understanding the S1a and S1b schedules. Although, the schedules have the time listed for timepoints in bold, the times the bus will arrive at stops in between is not clear. Passengers also get confused at stops served by routes traveling in both directions. FRED does plan to install new bus signs that include the schedules and route numbers. Other items discussed were the website, which is difficult to understand, and the need for a system of alerts to be sent to cell phones.

### Technology

In the discussion on technology, drivers said they do not want more technology on the buses that required them to do more things other than focusing on driving. Automated Passenger Counters (APC) would be helpful and a fare collection device that counted change was requested. Supervisors mentioned the need for a better communication mechanism with the drivers.

Other comments made by supervisors and staff are provided below.

- Passengers express that they depend on the service.
- Any route changes or new routes should be discussed with drivers, and drivers should be given the opportunity to help plan the alignment.
- Flex route service in more rural areas may be an option.
- Many routes provide front door service to shopping centers; FRED would like to stop pulling into the centers, but customers have come to expect this service.

- Is a radial system still needed – all passengers may not need to transfer downtown. Massaponax could be a new hub.
- Customer service is very time consuming on supervisors. Customers expect a "small FRED" and call often with questions that require extensive answers.
- Passenger training could be increased. Passengers have a fear of being stranded, and FRED competes with shuttle buses at senior living facilities.
- The senior market is an untapped market with new communities in Lee Park, Massaponax and Celebrate VA.
- VRE and Commuter Buses have limited parking at the train station; riders want to connect to alternatives.
- The business community is not always supportive of FRED.

The **Public Transit Advisory Board (PTAB)** includes a group of FRED localities, partners and citizen representatives that meets periodically to provide citizen and private and public input on the public transit needs of the region. The PTAB meeting on February 3, 2010 included the following comments regarding FRED service.

- FRED's service hours should match work schedules. Service seven days a week should be considered and frequency improvements to university and major employers should be reviewed. All of which would stretch the span of service and increase expenses.
- Fares – up or down – which is better? Localities should be educated about the impact of fares on overall costs.
- Should cleaner fuel vehicles be considered?
- HCA is a new hospital on Route S2 that wants service and is a candidate to become a major partner.

A series **of Passenger Focus Groups** were held at various transfer locations throughout the FRED service area on May 4 and May 5, 2010. The following summarizes the comments received from passengers.

FRED CENTRAL: MAY 4, 2010

- Earlier and Later Service, Saturday Service
- Stops should be spaced closer together (more stops) on D2 when returning to FRED Central
- Weekend service
- Free Transfers
- Service to Corner's Corner in addition to Walmart
- Travel further out into suburbs
- Service to Quantico
- Service to Goodwill at Cosner's Corner
- Service to new Walmart near Dahlgren when it is built
- Serve CVS on Rt 301
- Move the stop at North Carolina Furniture store closer to Family Dollar
- Stop near Harmony Park across from Round Hill
- Spotsylvania: Don't stop at empty Ukrops ,instead go to Southpoint

- Germanna – S2 should go to Cosner's Corner
- More frequent service in King George
- Serve new Walmart (Village Parkway) on RT17 (D2)
- D5 service should run earlier (7 am) and an hour later, with a limited Saturday schedule
- Spotsylvania routes should be hourly
- Go out further to serve Lake Arrowhead
- Start earlier/end later
- More transfer points
- More direct routes – limited stop/express
- Switch to fixed-route w/paratransit
- S3 needs reverse commute trips
- Deviations take too much time, paratransit needs are not adequately served – wheel chairs take seven minutes
- Connect to PRTC, Culpeper, Hanover and Quantico
- Earlier, later, and weekend service
- D2 should go to Walmart (US 17)
- Training for drivers to deal with passengers needing help (refer to social service agencies)
- Run an hour earlier on S3
- More Frequent (15 minutes on S3)
- D2 – service in Stafford, ability to get from west end of D2 to north end without going to FRED Central
- King George – more frequent service (but so few riders, hard to justify)
- Rude and bad language from passengers – FRED does not address them

LEE'S HILL, MAY 4, 2010

- Stafford route should stop by Bottom Dollar before you get to FRED Central
- Extend to Courthouse Road in Stafford, cover area south of D4
- Go down to Cosner's Corner to Target
- Really enjoy riding FRED
- Good service, saves money after work, but does not run early enough in the AM
- Have to transfer two to three times depending on where you are going

GORDON RD PNR (VRE FEEDER SERVICE), MAY 4, 2010

- FRED stopped shuttle from station at 4:00 – need it, particularly on Friday
- Non FRED commuter bus rider would ride FRED if it went all the way to DC for $1.25
- Likes service, only uses VRE feeder, likes multi-ride passes and that it takes Metro Passes
- Really like service, riding for two weeks
- Likes service, riding for two years
- Would like PRTC to take SmarTrip cards, but nice that they take transfers
- Bus is always at VRE station waiting

UKROPS PNR (VRE FEEDER SERVICE), MAY 4, 2010

- Commuters use train as back up (especially on Friday)
- S1 does not start early enough, should connect to VRE feeder, takes too long to connect between buses
- Courthouse area (Spotsylvania) needs more frequent service
- VRE Feeder service from Spotsylvania Towne Centre to Train Station
- Some VRE trips (evening) are standing room only, need more buses or bigger buses, especially since passengers are paying more
- Waverly Village (behind Spotsylvania Town Centre)– direct limited service during peak hours and at lunch time to train station
- Lake of the Woods in Orange County has ¼ of the population at Spotsylvania border
- VRE service is greatly appreciated, gives more options for those that slug or commute into DC to take the train and still reach their car

STAFFORD, MAY 5, 2010

- Connect to VRE and Quantico
- Need service like VRE feeder to bring people from neighborhoods to commuter lots in Stafford
- Need service to Quantico to connect to OmniLink at commuter lot
- Service to town of Quantico
- Onville Road (stop across from Aquia car care)is a dangerous stop, bus should turn into Garrisonville Woods and turn around, stop is on dangerous road, no shelter or protection from cars
- Health department stop in Fredericksburg only has bench/shelter on one side. If you are not on the right side of the street, the bus will pass you by
- Too many transfers and travel time is too long between Stafford and Massaponax
- Buses in Stafford start too late, should start earlier (7 am) and later to match other FRED routes
- Service seems oriented toward elderly people for shopping and not working people without cars
- Early morning service to commuter lots
- Schedules are difficult to read
- More direct access to customer service line, have to go through all extensions to find a person
- Longer hours, i.e. Vista routes should run later
- More direct service from Stafford by FRED, it takes too long to get into Fredericksburg
- Service to Quantico
- Pass options for transfers
- Porter Library – earliest bus is 9:20, can't get to commuter lot early enough – does not run late enough
- Passengers cuss and drivers don't stop them
- MWH – requires two transfers, but $1.50 is cheaper than a cab

- Routes should run more often and later
- Travel between King George and Central Park/DT Fredericksburg
- Transfers should be free, would pay more to not have to pay transfers for each bus
- Drivers are professional
- Need shelters and schedules at bus stops

## 3.7 FACILITY AND EQUIPMENT CHARACTERISTICS

### FACILITIES

The City of Fredericksburg owns the Lawrence A. Davies Transit Center (FRED Central), which opened in October 2007. The facility serves as the main transfer center and houses the customer service, administrative and dispatch functions for FRED. The maintenance facility is located in a portion of a building located approximately one mile north of FRED Central on Jefferson Davis Highway. Although the site is currently leased, FRED is in the process of purchasing the entire site. This site houses the FRED fleet as well as the maintenance facilities. With the acquisition of the facility, FRED staff plans to expand the amount of services it performs on its own fleet. Over time, FRED expects to expand into other parts of the building.

FRED also has several locations throughout the service area that serve as transfer points. Most of these locations are in shopping centers or other locations not owned by FRED. Many of these transfer locations lack passenger amenities and shelters.

### FLEET

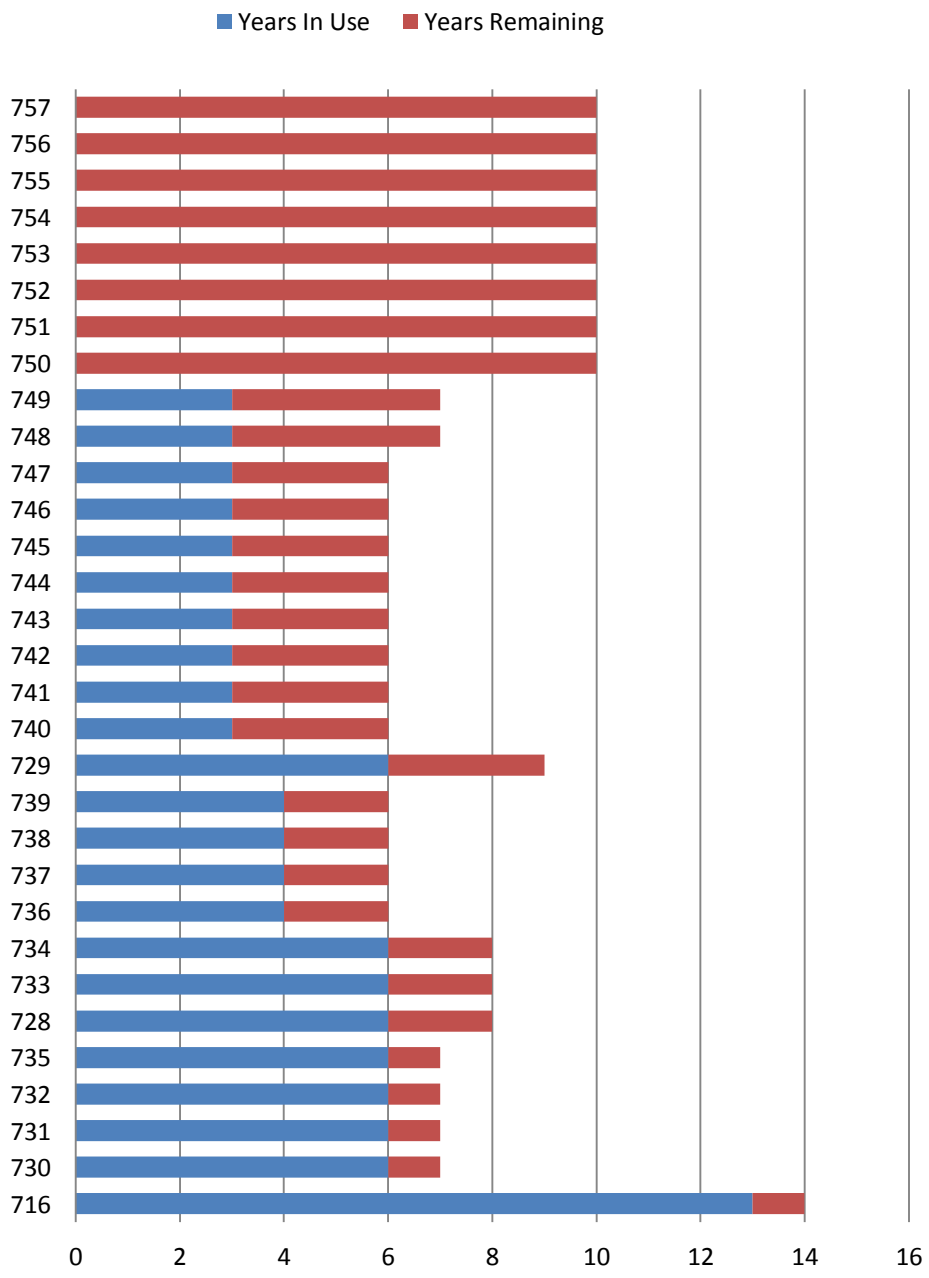
As of December 2009, the average age of FRED's 31 transit vehicles was eight years old. A majority of FRED's fleet includes body-on-chassis buses with a useful life of five years. Thus, many of FRED's vehicles are due for replacement. In April/May 2010, FRED received eight replacement vehicles and an additional four vehicles have been ordered. The remainder of the fleet will be due for replacement during the timeframe of this TDP. Figure 3.16 shows the number of years FRED vehicles have been in service and their remaining useful life. As a part of this vehicle replacement program, FRED will reduce its total fleet by one (from 31 to 30), assuming no new service is added.

## 3.8 ITS PROGRAMS

The US Department of Transportation's Research and Innovation Technology Administration defines Intelligent Transportation Systems (ITS) as follows: "ITS improves transportation safety and mobility and enhances American productivity through the integration of advanced communications technologies into the transportation infrastructure and in vehicles. Intelligent transportation systems (ITS) encompass a broad range of wireless and wire line communications-based information and electronics technologies".

FRED recently purchased and installed Global Positioning Systems (GPS) on FRED vehicles. The implementation of the GPS will provide FRED staff and passengers with real time arrival and departure information, permit vehicles to be tracked along their routes and measure vehicle speed.

**FIGURE 3.16: FRED FLEET INVENTORY**
**Useful Life and Years Remaining**
**(As of July 2010)**



## 3.9 TITLE IV AND TRIENNIAL REVIEW

### TITLE VI

FRED's Title VI program is updated annually. FRED's Title VI policy is stated below with the most recent Title VI submittal and approval by FTA on file at FRED's administrative offices.

*Policy of Non-Discrimination – Title VI*

*As a matter of policy and to comply with Federal grant requirements, FRED is committed to providing service to its customers and dealing with all prospective contractors and service providers without discriminating on the grounds of race, color or national origin. FRED certifies its commitment to and compliance with this policy annually with the Federal Transit Administration. Copies of this certification are on file at FRED Central, 1400 Jefferson Davis Highway.*

### TRIENNIAL REVIEW

FRED completed a Triennial Review in FY2008, with all findings closed in August 2008. The Triennial review covered 22 out of 23 compliance areas. No deficiencies were found in 19 of the 22 areas. Deficiencies were found in three areas: Financial, Satisfactory Continuing Control, and Buy America. Advisory comments were made in the areas of Maintenance and Safety and Security. The following summarizes the deficiencies found in the audit. The Triennial Review Final Report and Closeout Letter can be found in Appendix E.

***Financial:*** The city was not completing the unliquidated obligations line of the Financial Status Report. The finding was resolved when FRED provided a copy of the processes and procedures they will follow to track and report unliquidated obligations.

***Satisfactory Continuing Control:*** Records provided for vehicles did not have the grant number, location, use and condition and federal percentage. Additionally, a physical inventory of FTA funded equipment was not conducted in the required two year time frame. FRED was given 60 days to comply with the finding and did so.

***Buy America:*** During the review, it was discovered that a recent bus procurement did not follow certain procedural elements of the Buy America requirements. The City of Fredericksburg revised its procurement procedures to address the federal requirements.

## 3.10 Service Coverage Characteristics

This section describes the service coverage FRED provides to residents, workers and visitors throughout the region. Using population and employment estimates provided by the Fredericksburg Area Metropolitan Planning Organization (FAMP0) for 2006 and 2015 based on Traffic Analysis Zones (TAZs). Service coverage includes access to fixed route service as well as density surrounding the transit service. While traditionally, ¼ mile radius is considered accessible for someone traveling by foot to reach a bus stop, FRED offers a ¾ mile deviation service; therefore, estimates include both a ¼ mile walk radius and a ¾ mile buffer to determine service coverage.

### Access to Service

Population and employment estimates for 2006 and 2015 by TAZ from FAMPO were used to estimate the number of residents and employees that live and work within a ¼ mile walk radius and ¾ mile deviation radius of FRED's regular fixed route service in the Fredericksburg region. Table 3-5 shows the estimated population and employment within FRED's ¼ mile and ¾ mile service buffer. While FRED service covers almost half of the workforce in 2006, projections for 2015 reveal new employment centers may be underserved. FRED provides service to approximately 30.4 percent of the region's residents with new residential areas projected to develop outside of the service area by 2015.

**TABLE 3.5: FREDERICKSBURG REGIONAL POPULATION AND EMPLOYMENT WITHIN A ¼ AND ¾ MILE RADIUS OF FRED**

| | Residents | | | | Employees | | | |
|---|---|---|---|---|---|---|---|---|
| **Year** | **¼ Mile from FRED** | **¾ Mile from FRED** | **Region Total** | **¼ / ¾ % Of Total** | **¼ Mile from FRED** | **¾ Mile from FRED** | **Region Total** | **¼ / ¾ % of Total** |
| **2006** | 93,076 | 167,607 | 306,402 | 30.4%/57.7% | 55,776 | 79,509 | 109,005 | 51.2%/72.9% |
| **2015** | 111,382 | 207,601 | 394,369 | 28.2%/52.6% | 59,620 | 94,275 | 144,106 | 41.4%/65.4% |

### Propensity for Transit

For mass transit to be successful there needs to be "mass" or density. Fixed-route transit services are generally more successful in areas with high household and employment densities. Thus, one means of evaluating transit is to identify areas served that have attained at least the minimum densities, or thresholds, sufficient to support fixed route transit service. Using density thresholds, transit propensity is estimated for 2006 and 2015 using household and employment data for each TAZ.

The methodology for this approach is derived from the Transit Cooperative Research Program's (TCRP) *Transit Capacity and Quality of Service Manual – 2nd edition* (2003), which identifies a density of three households per acre and/or four jobs per acre as the thresholds to qualify as a transit-supportive environment. Figures 3.17 through 3.46 display 2006 and 2015 household densities, employment densities and population densities for the FRED service area. FRED service currently serves virtually all transit supportive areas.

**FIGURE 3.17: 2006 HOUSEHOLD DENSITY - CITY OF FREDERICKSBURG**

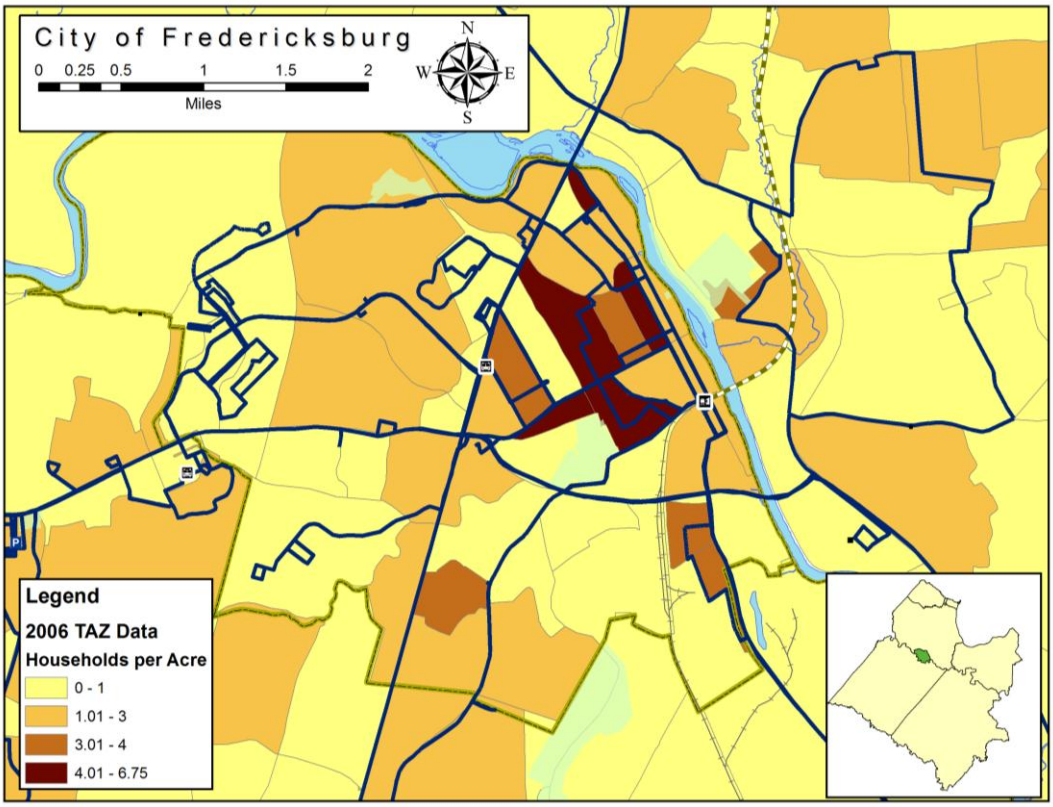



**FIGURE 3.18: 2015 HOUSEHOLD DENSITY - CITY OF FREDERICKSBURG**

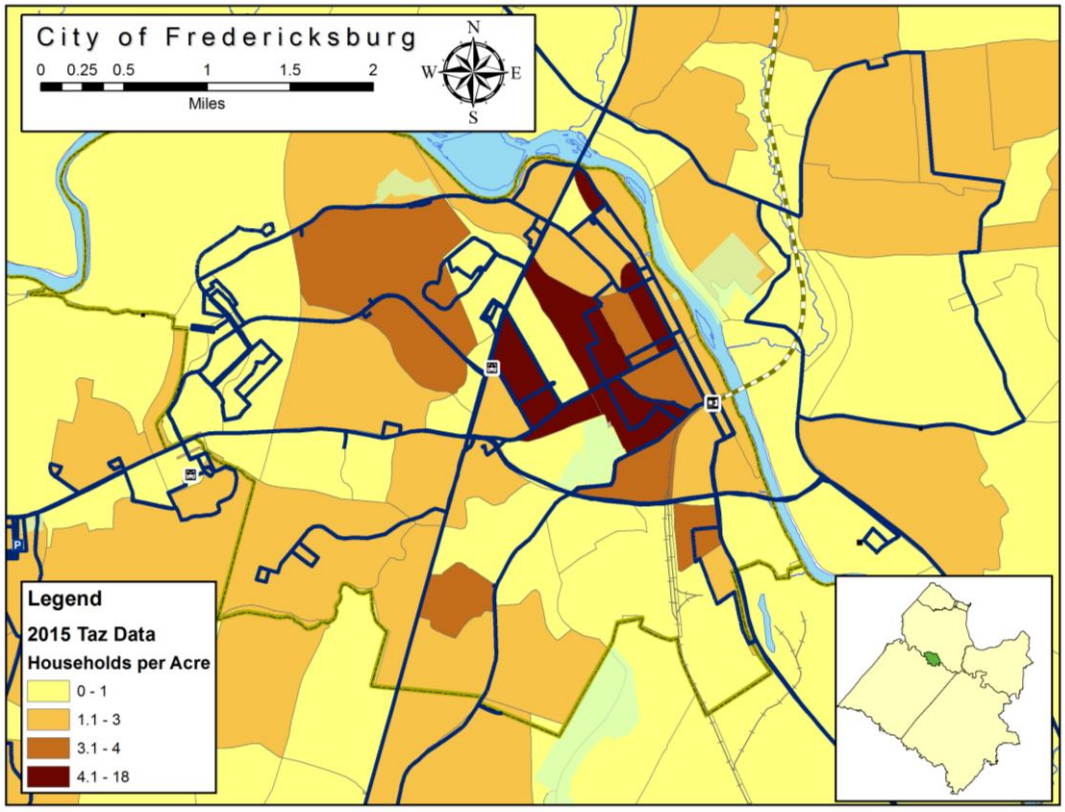


**FIGURE 3.19: 2006 HOUSEHOLD DENSITY - SPOTSYLVANIA COUNTY**

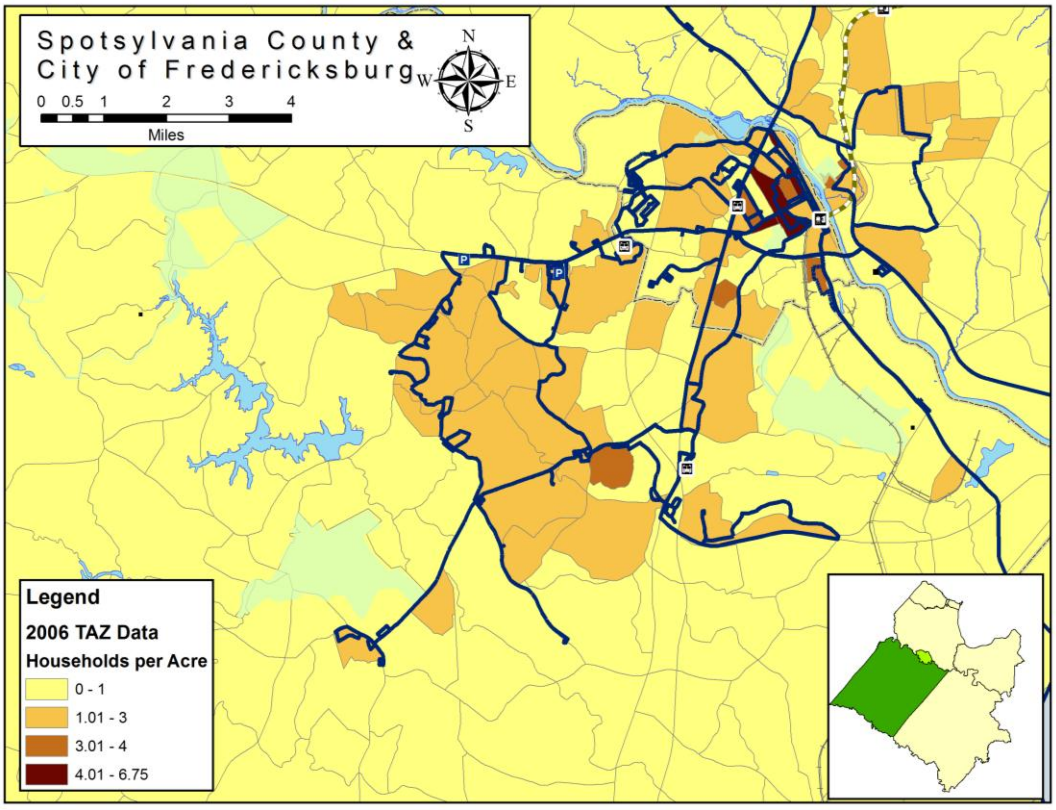



**FIGURE 3.20: 2015 HOUSEHOLD DENSITY - SPOTSYLVANIA COUNTY**

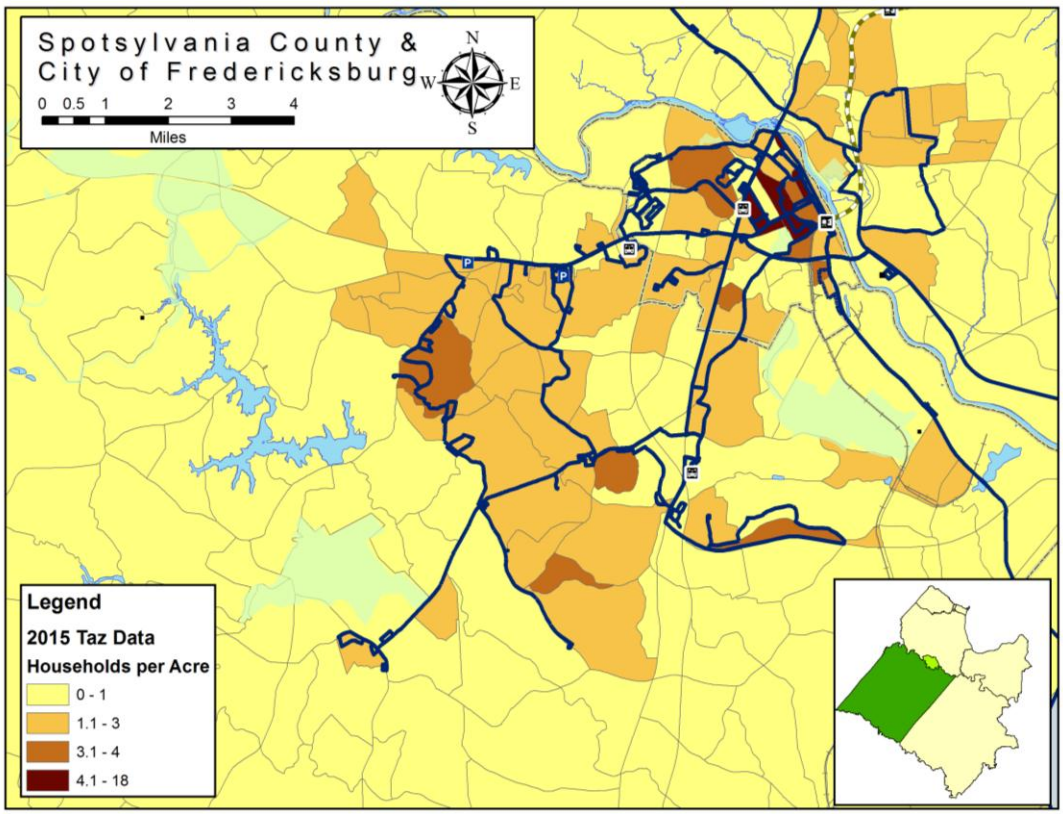


**FIGURE 3.21: 2006 HOUSEHOLD DENSITY - KING GEORGE COUNTY**

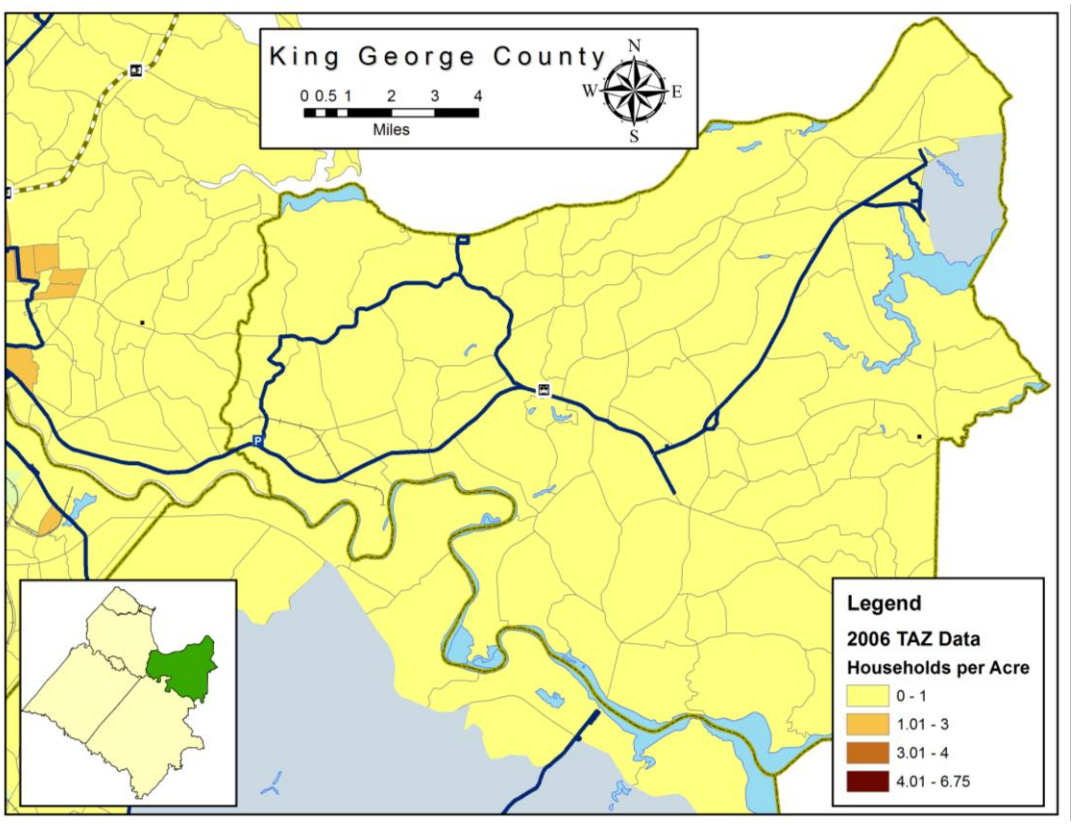



**FIGURE 3.22: 2015 HOUSEHOLD DENSITY - KING GEORGE COUNTY**

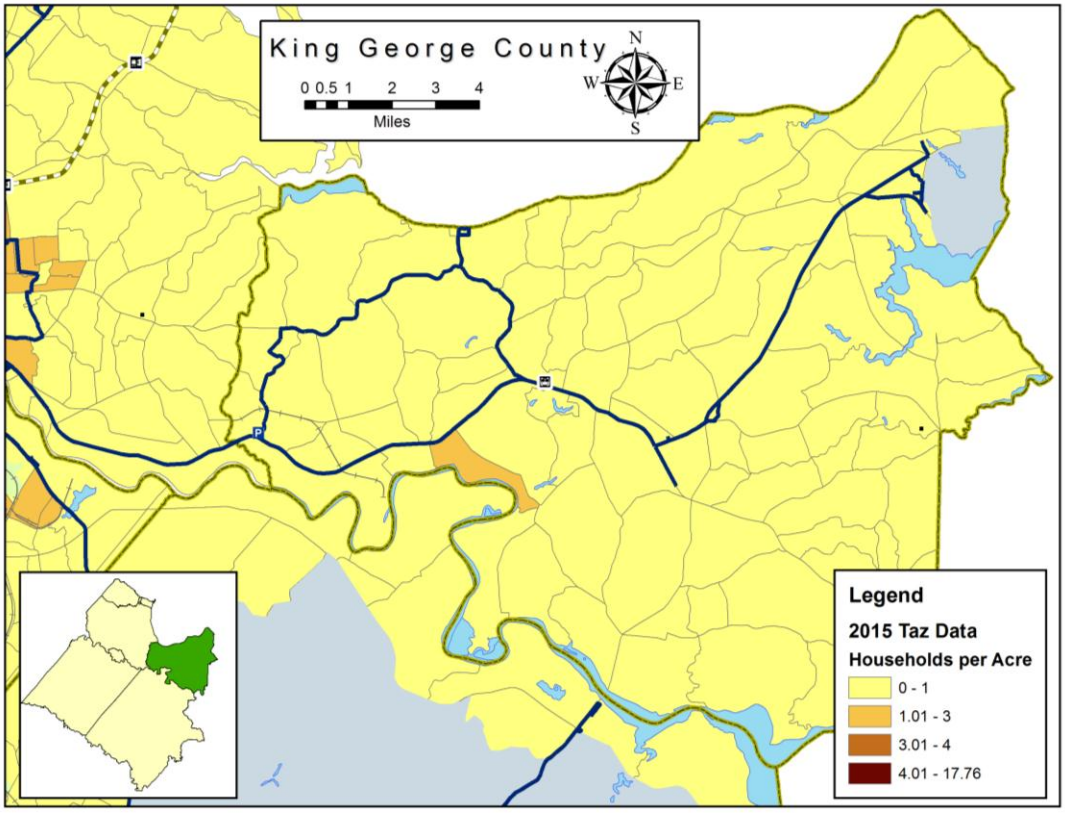


**FIGURE 3.23: 2006 HOUSEHOLD DENSITY - STAFFORD COUNTY**

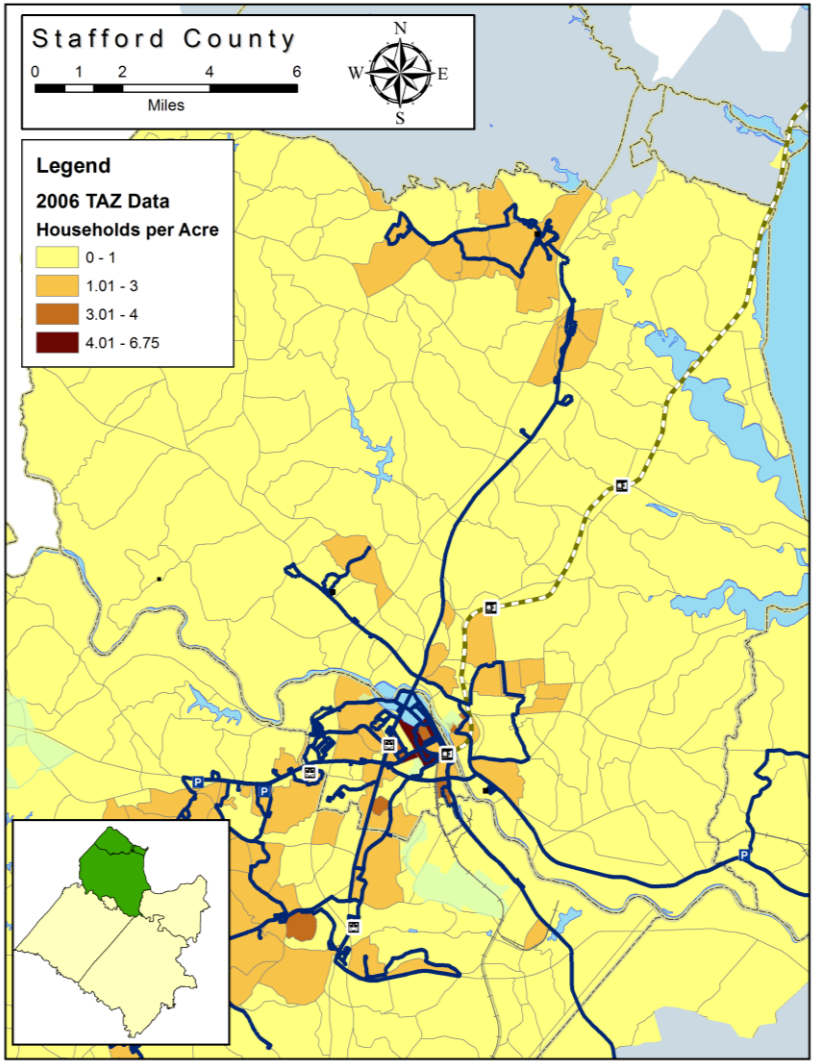



**FIGURE 3.24: 2015 HOUSEHOLD DENSITY - STAFFORD COUNTY**

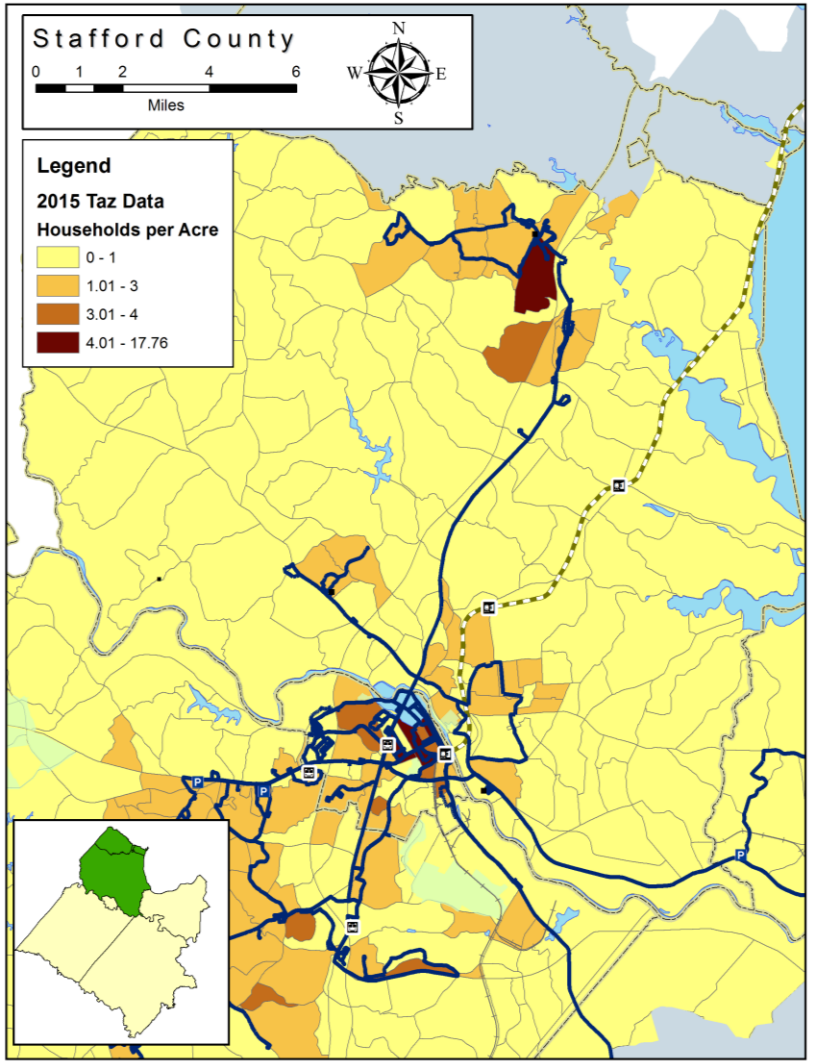


**FIGURE 3.25: 2006 HOUSEHOLD DENSITY - CAROLINE COUNTY**

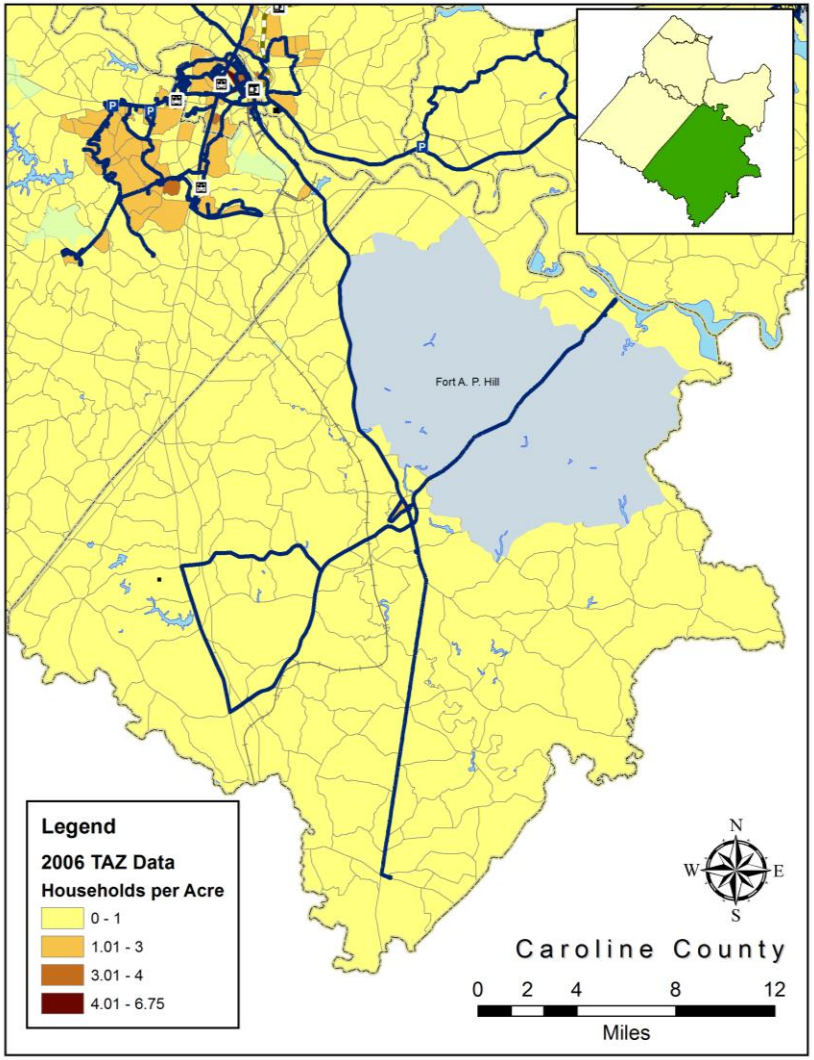



**FIGURE 3.26: 2015 HOUSEHOLD DENSITY - CAROLINE COUNTY**

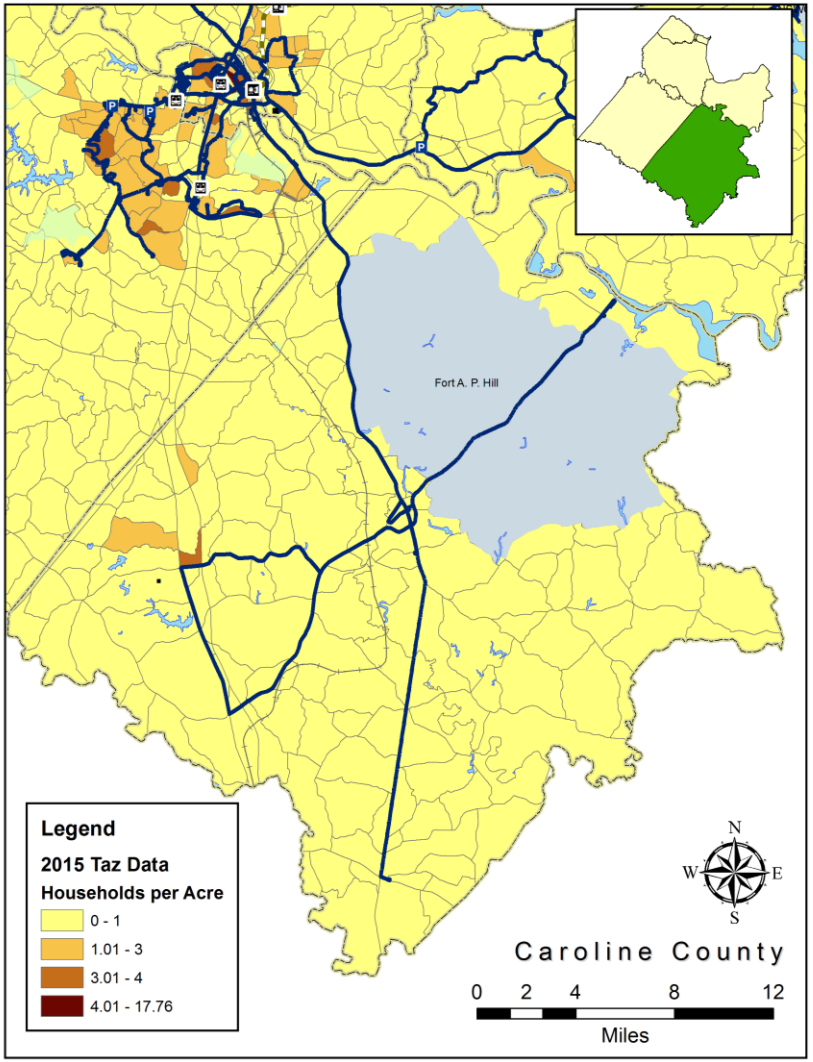


**FIGURE 3.27: 2006 EMPLOYMENT DENSITY - 2006 CITY OF FREDERICKSBURG**

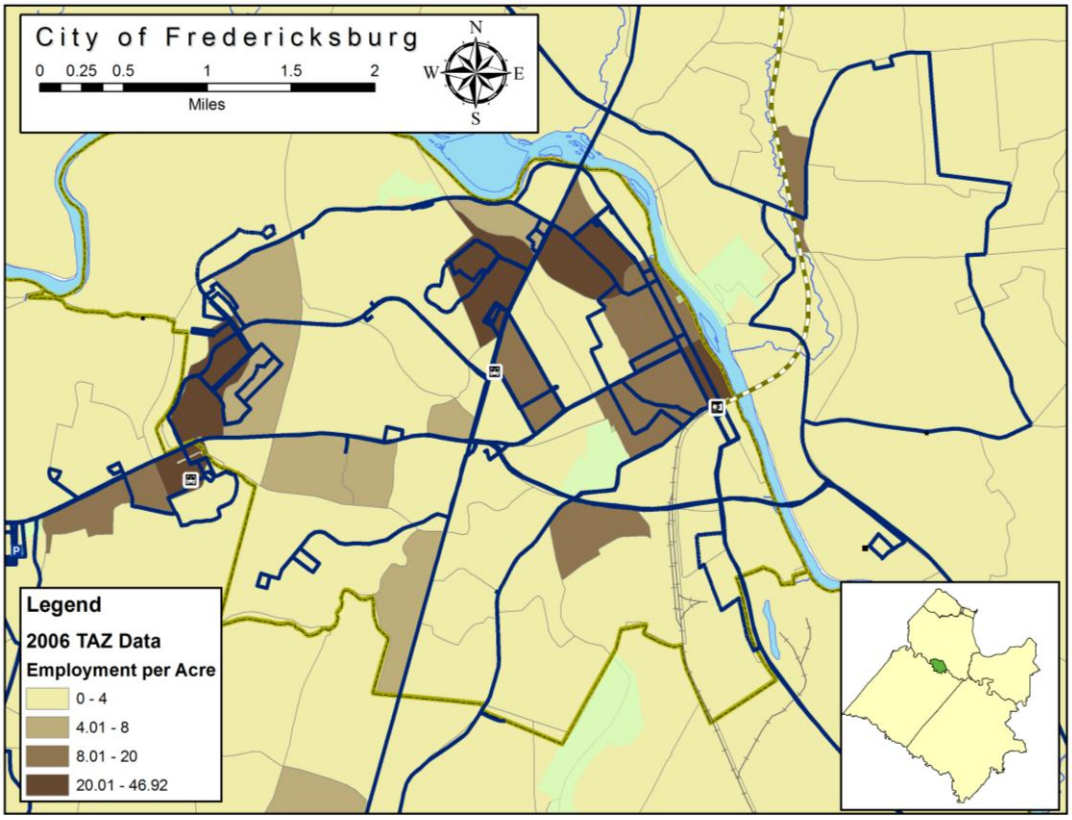



**FIGURE 3.28: 2015 EMPLOYMENT DENSITY - CITY OF FREDERICKSBURG**

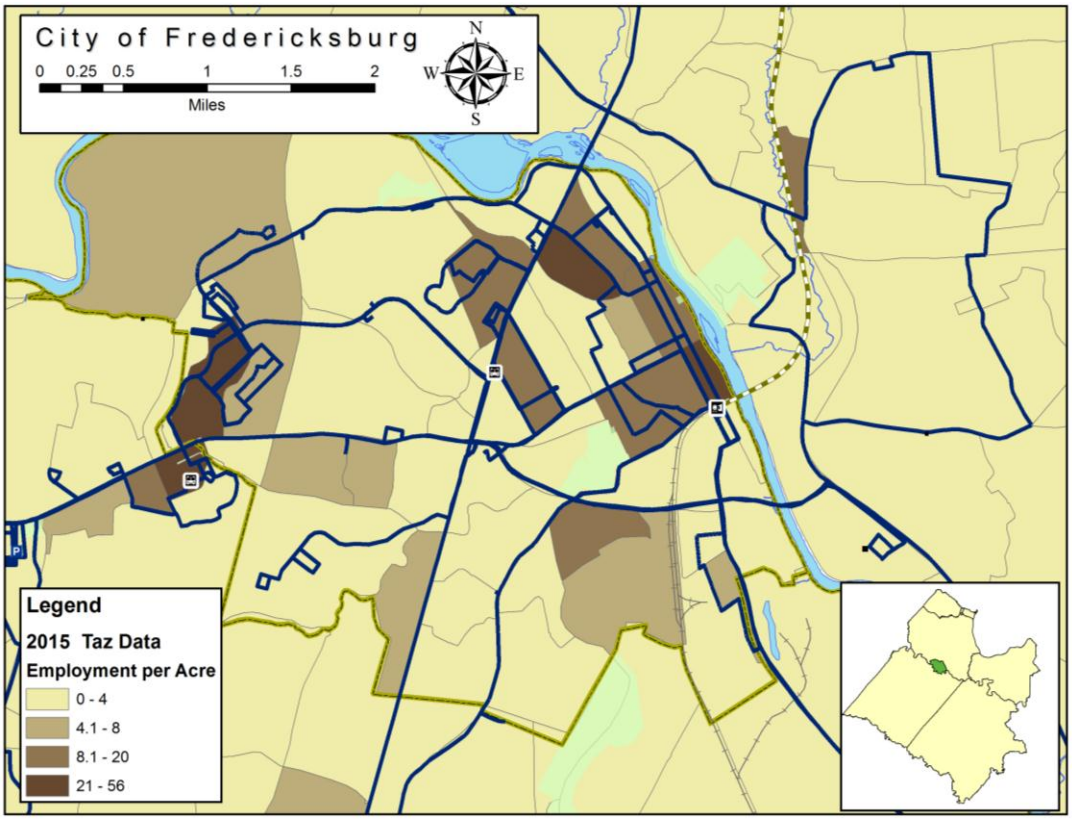


**FIGURE 3.29: 2006 EMPLOYMENT DENSITY - SPOTSYLVANIA COUNTY**

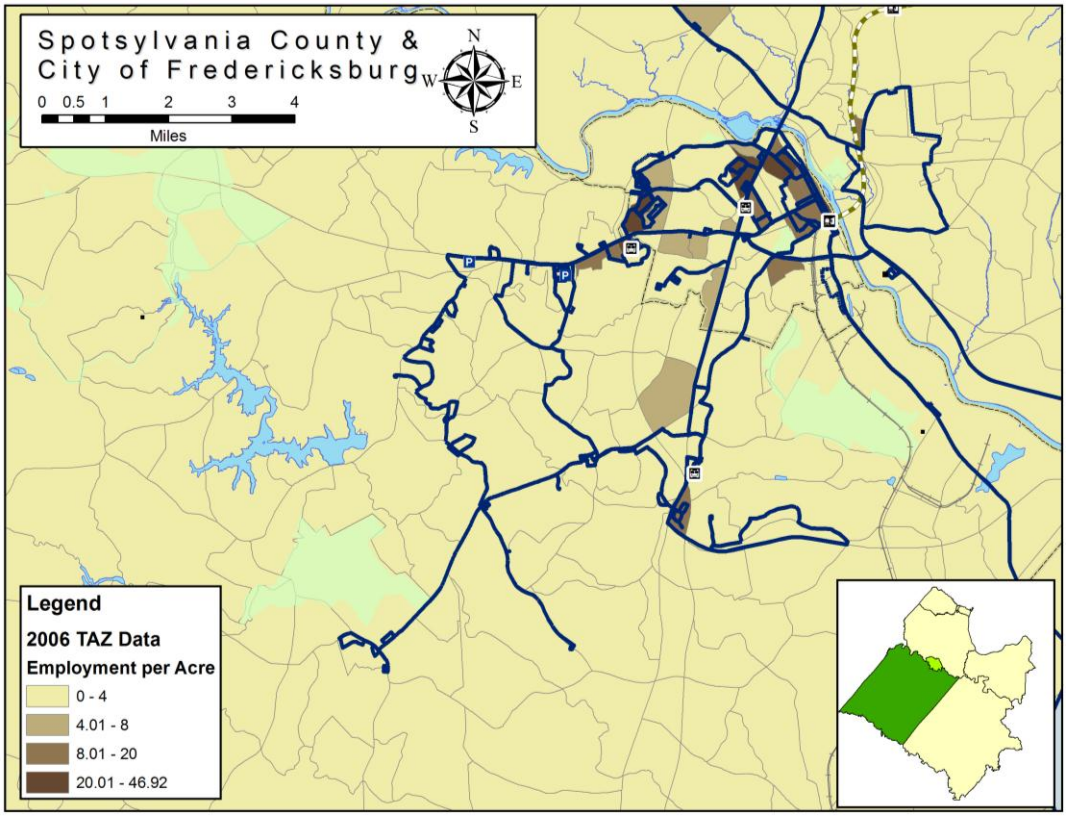



**FIGURE 3.30: 2015 EMPLOYMENT DENSITY - SPOTSYLVANIA COUNTY**

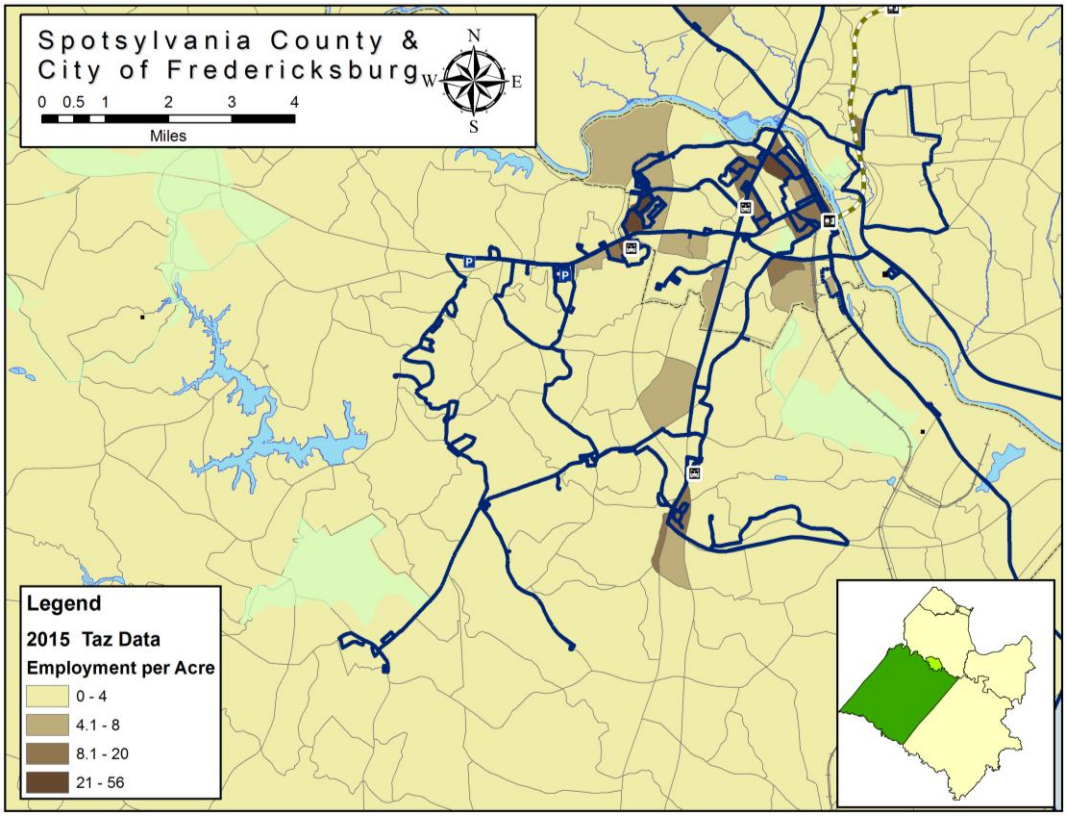


**FIGURE 3.31: 2006 EMPLOYMENT DENSITY - KING GEORGE COUNTY**

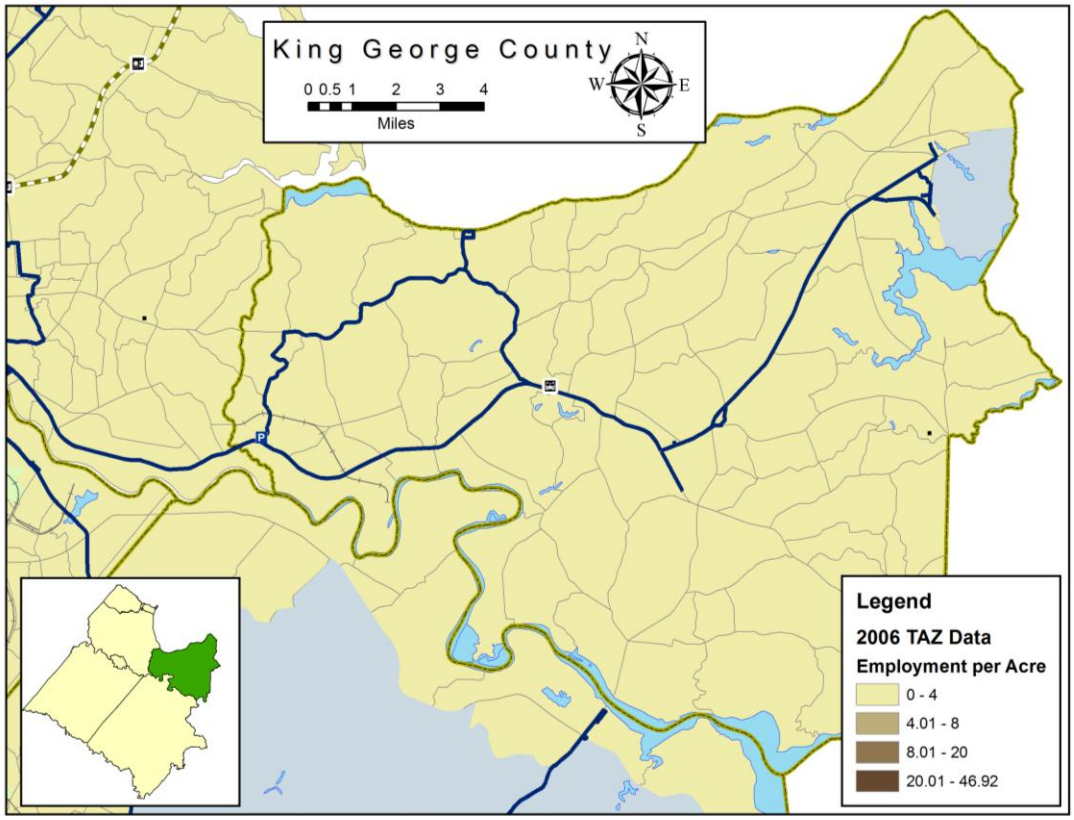



**FIGURE 3.32: 2015 EMPLOYMENT DENSITY - KING GEORGE COUNTY**

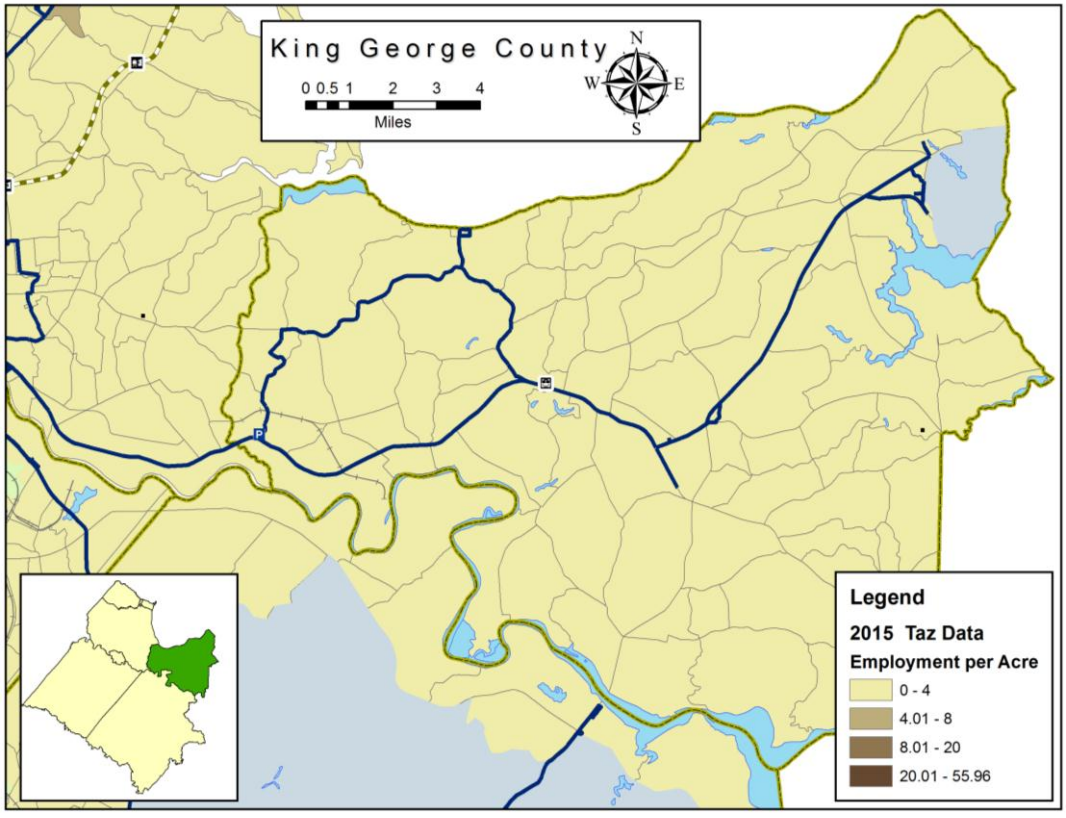


**FIGURE 3.33: 2006 EMPLOYMENT DENSITY - STAFFORD COUNTY**

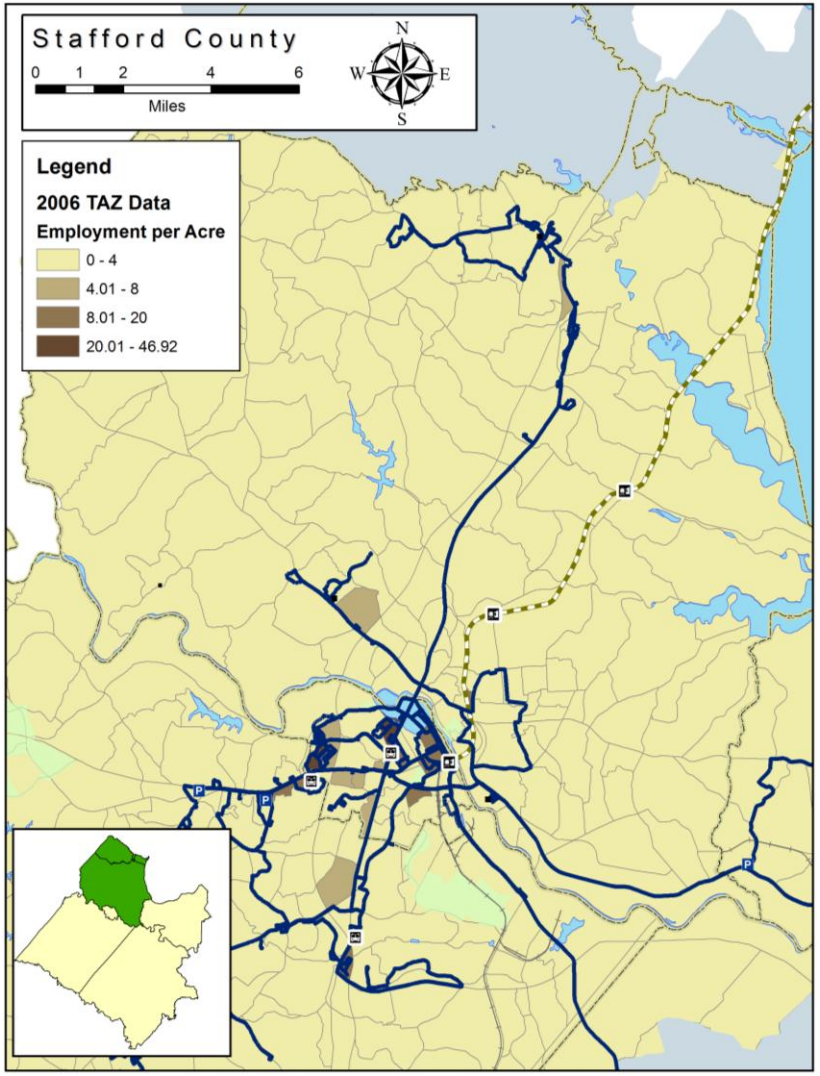



**FIGURE 3.34: 2015 EMPLOYMENT DENSITY - STAFFORD COUNTY**

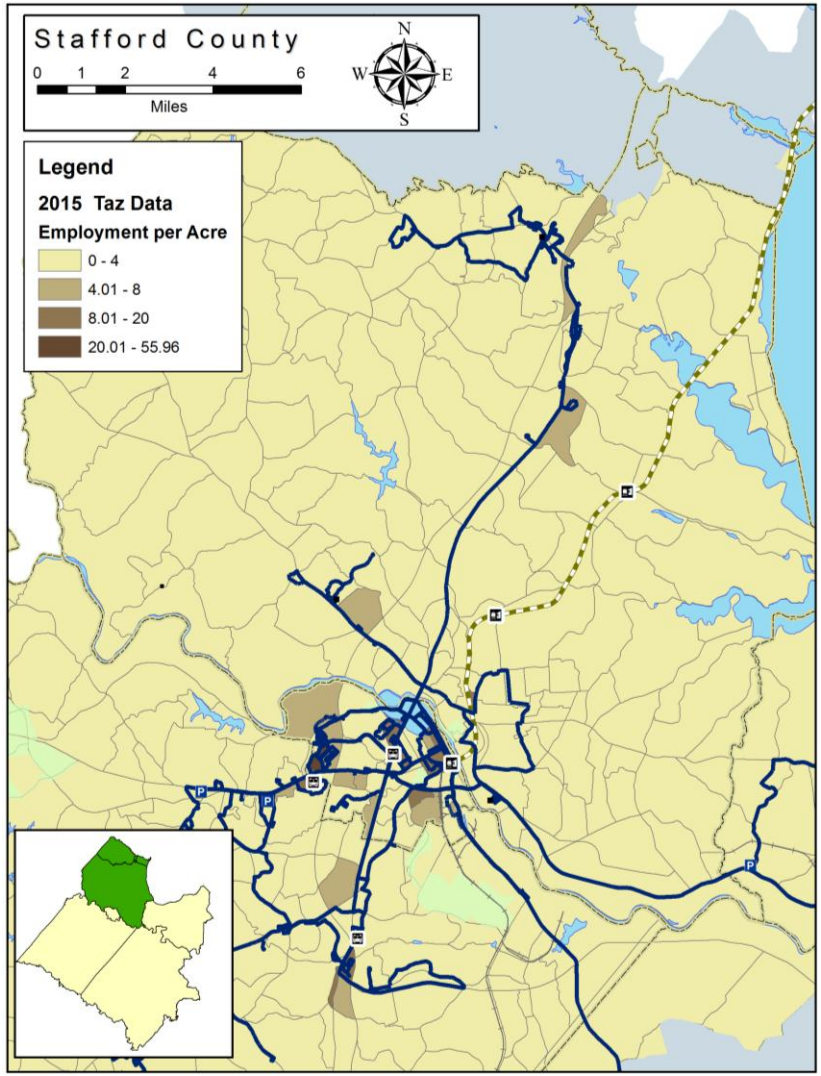


**FIGURE 3.35: 2006 EMPLOYMENT DENSITY - CAROLINE COUNTY**

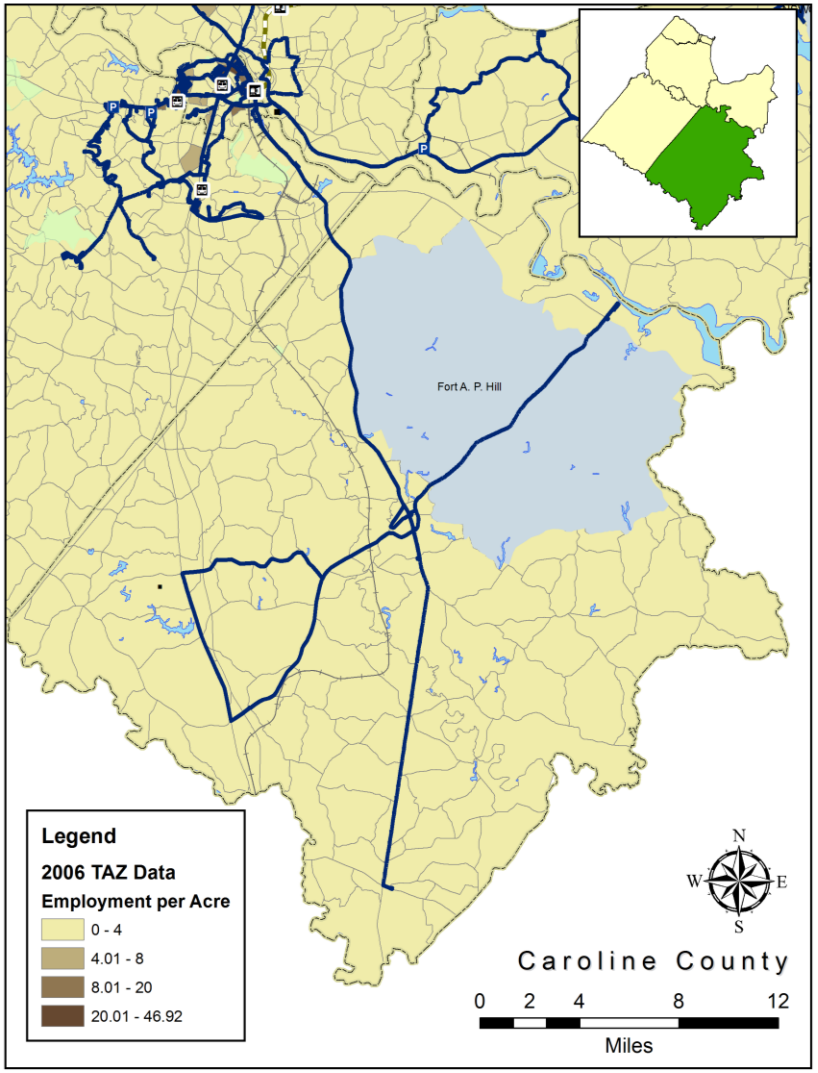



**FIGURE 3.36: 2015 EMPLOYMENT DENSITY - CAROLINE COUNTY**

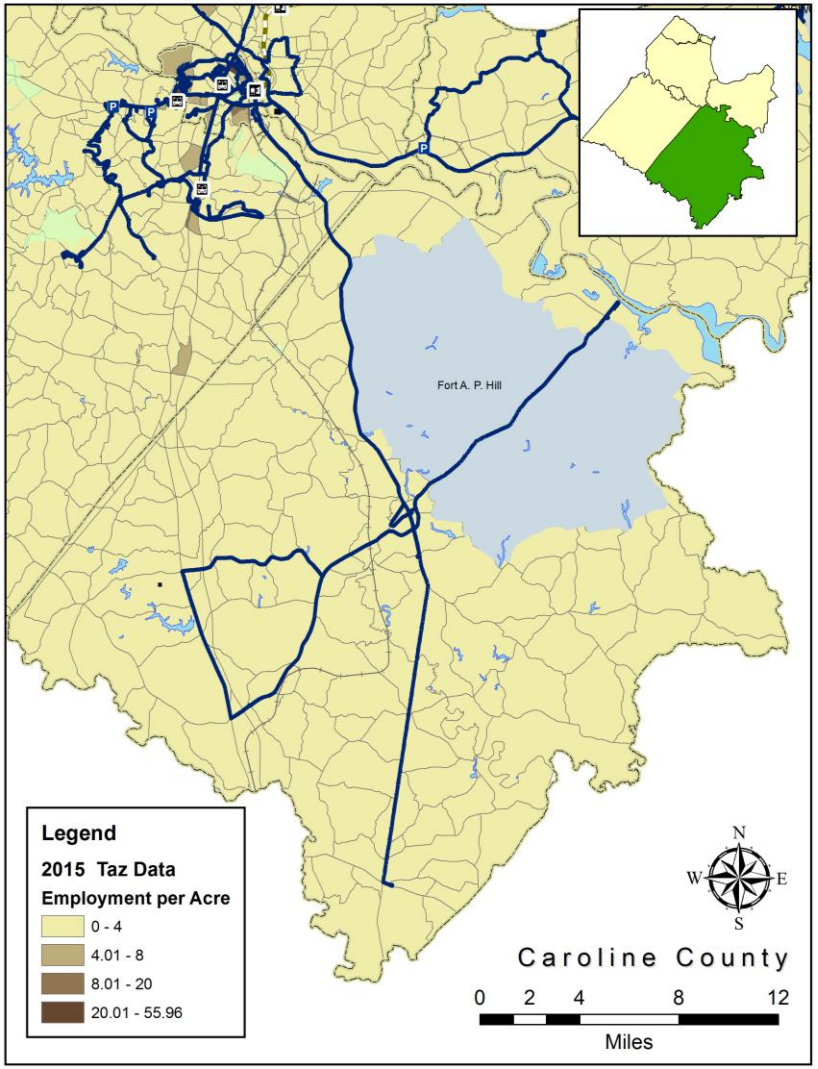


**FIGURE 3.37: 2006 POPULATION DENSITY - CITY OF FREDERICKSBURG**

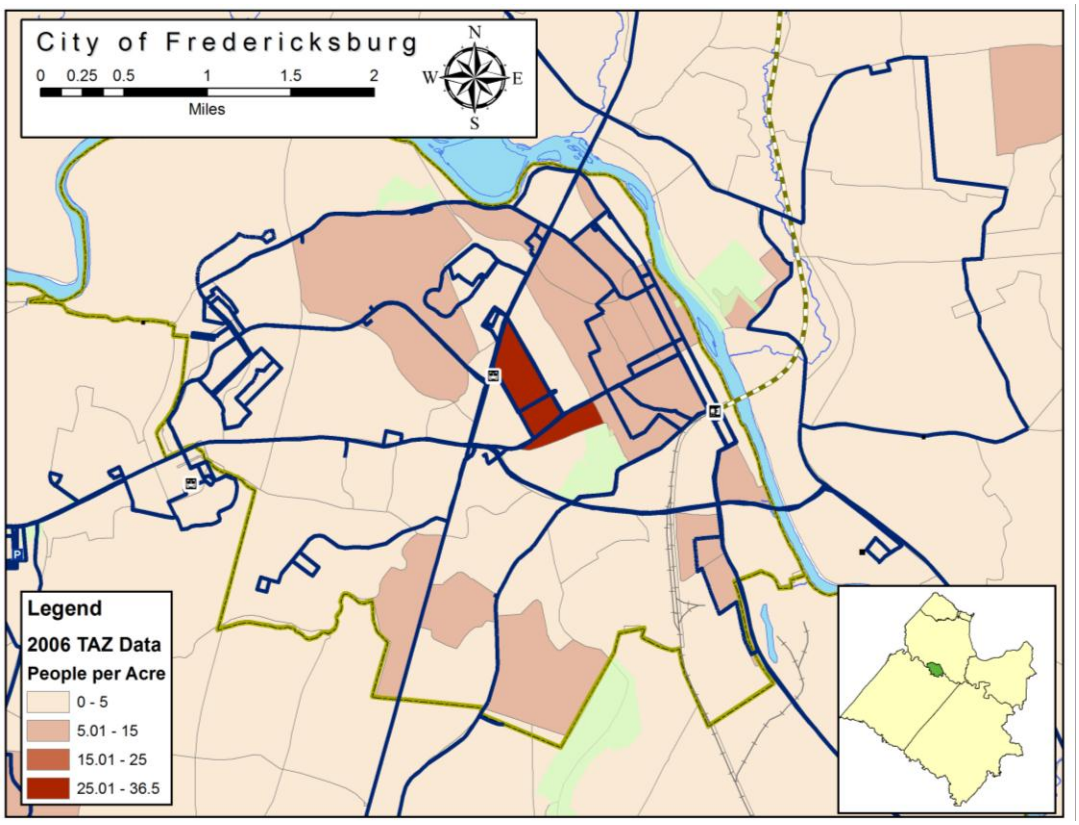



**FIGURE 3.38: 2015 POPULATION DENSITY - CITY OF FREDERICKSBURG**

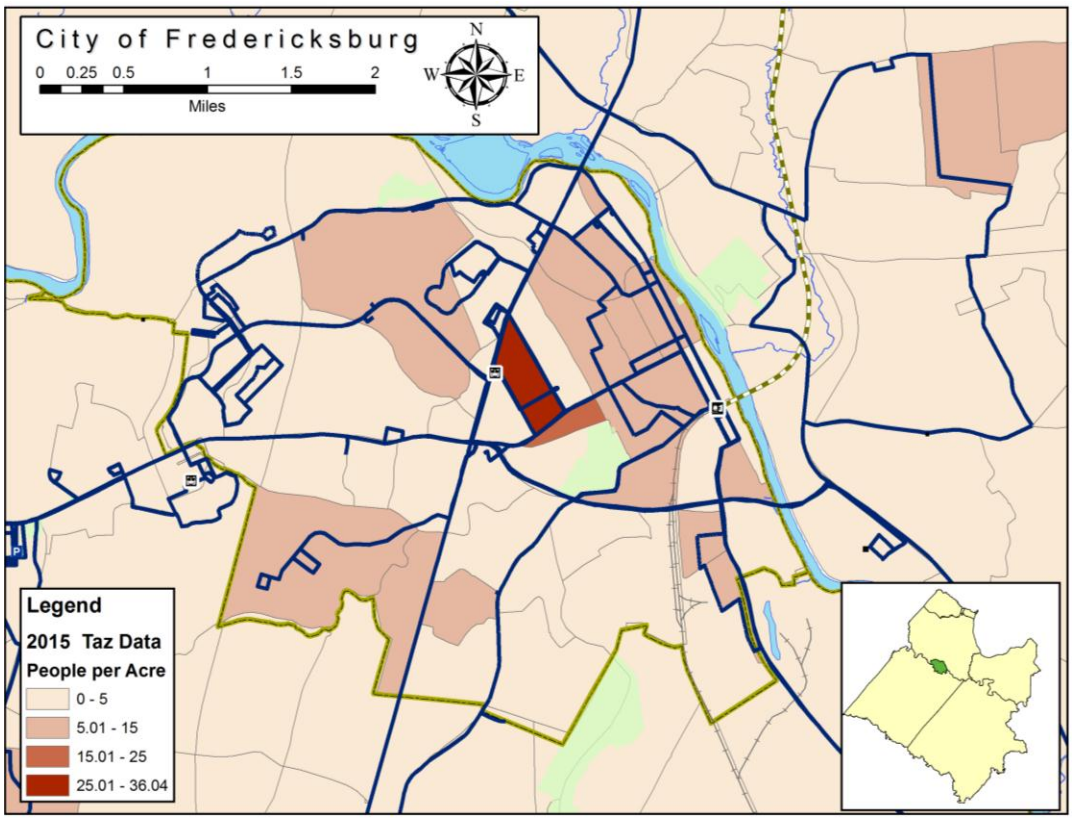


**FIGURE 3.39: 2006 POPULATION DENSITY - SPOTSYLVANIA COUNTY**

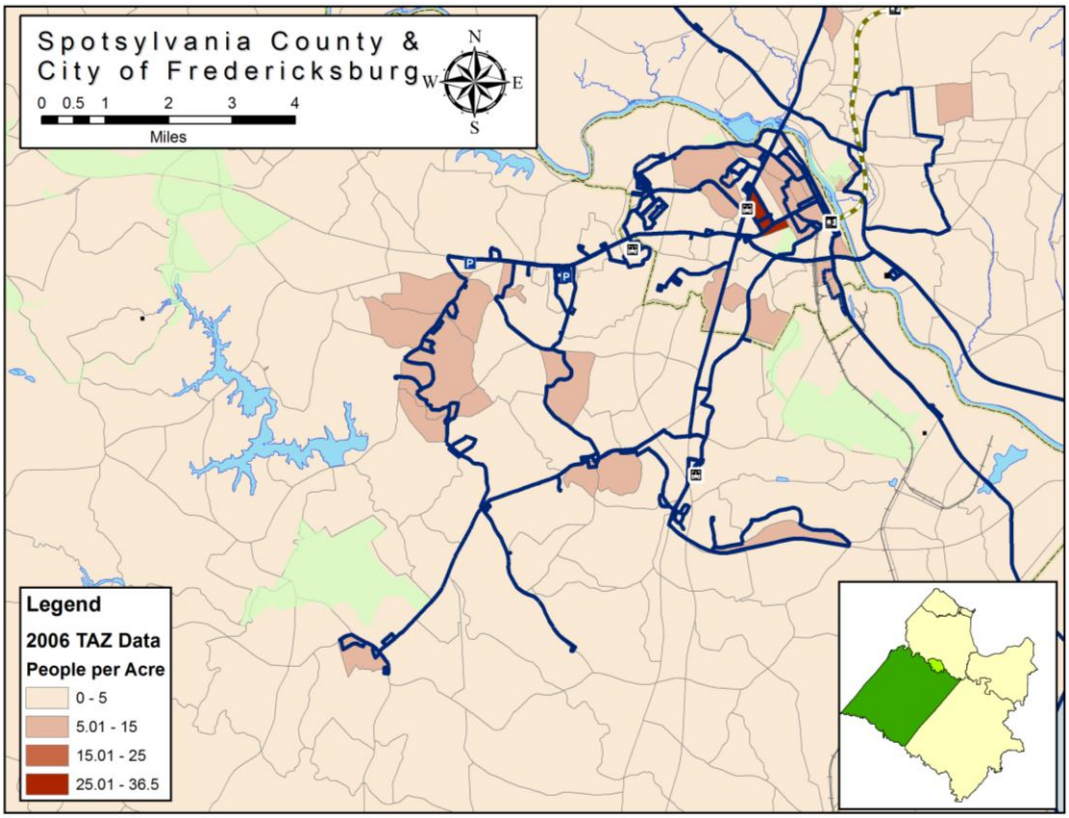



**FIGURE 3.40: 2015 POPULATION DENSITY - SPOTSYLVANIA COUNTY**

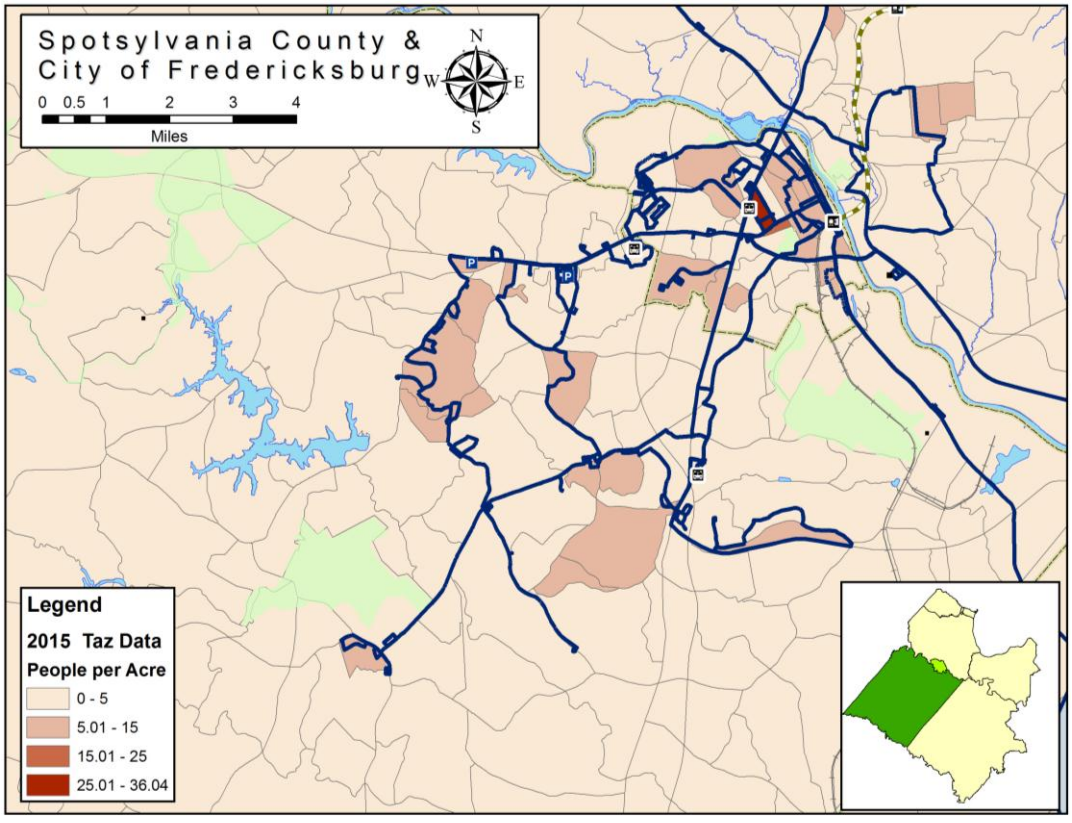


**FIGURE 3.41: POPULATION DENSITY - KING GEORGE COUNTY**

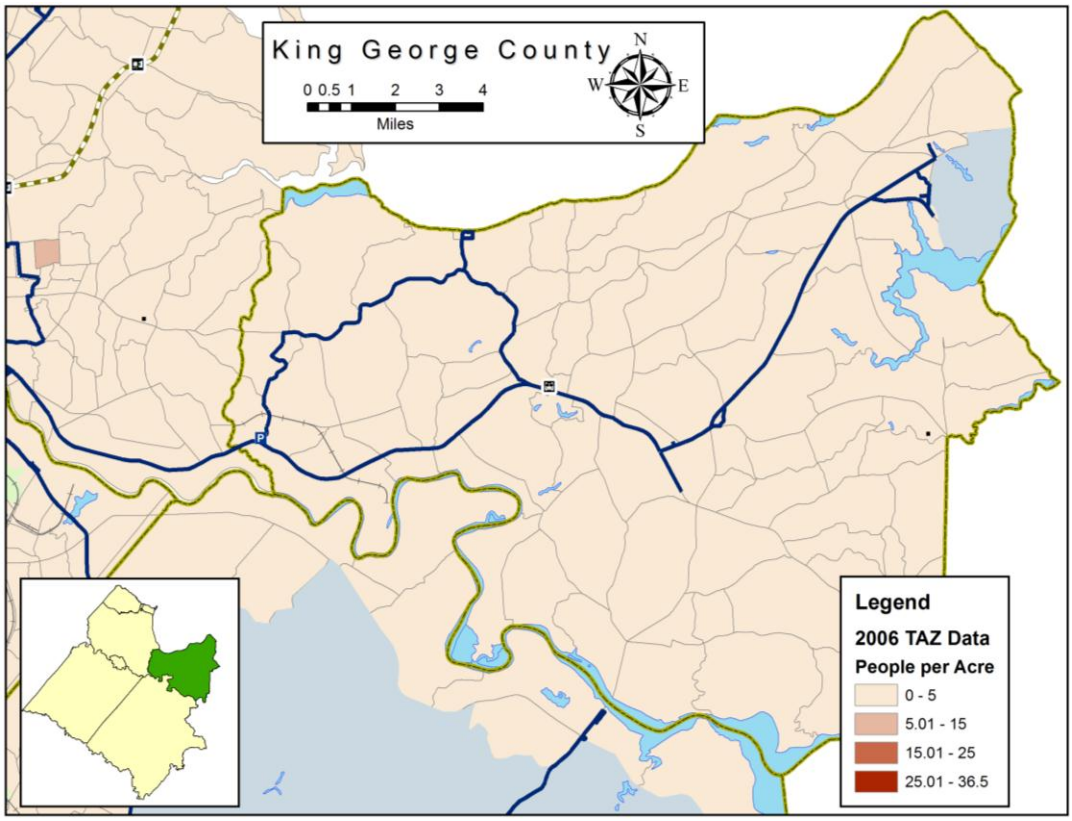



**FIGURE 3.42: 2015 POPULATION DENSITY - KING GEORGE COUNTY**

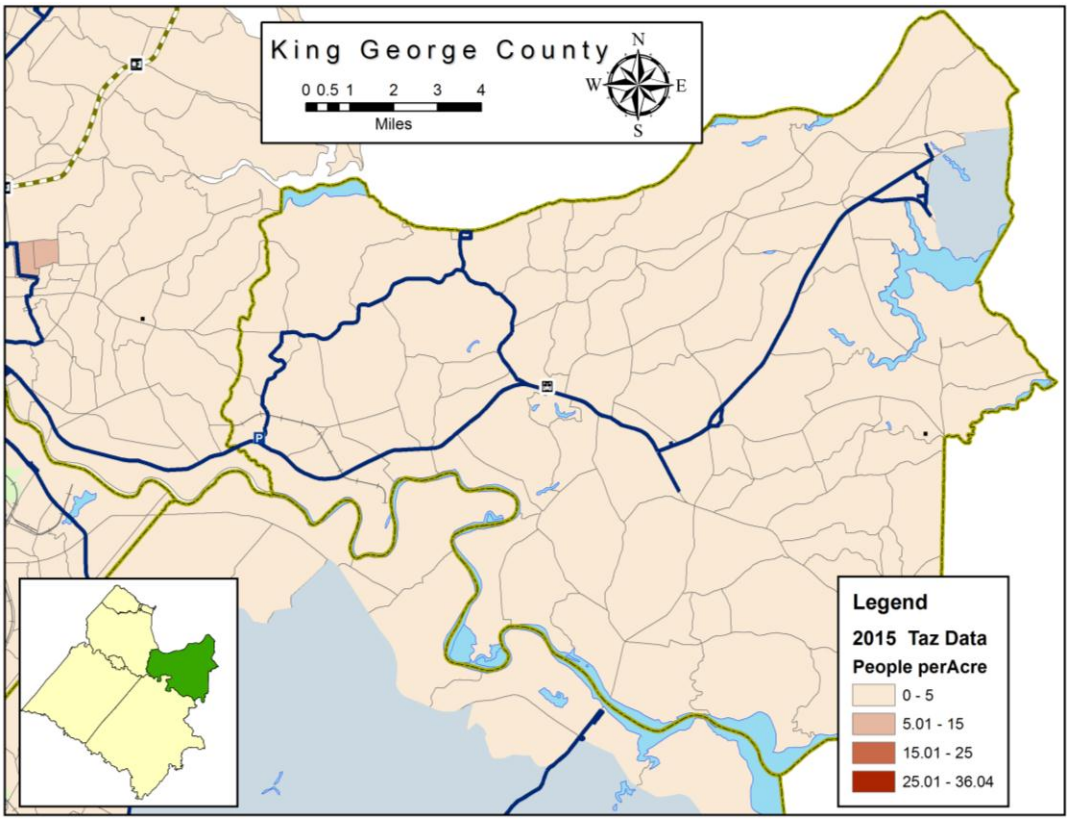


**FIGURE 3.43: 2006 POPULATION DENSITY - STAFFORD COUNTY**

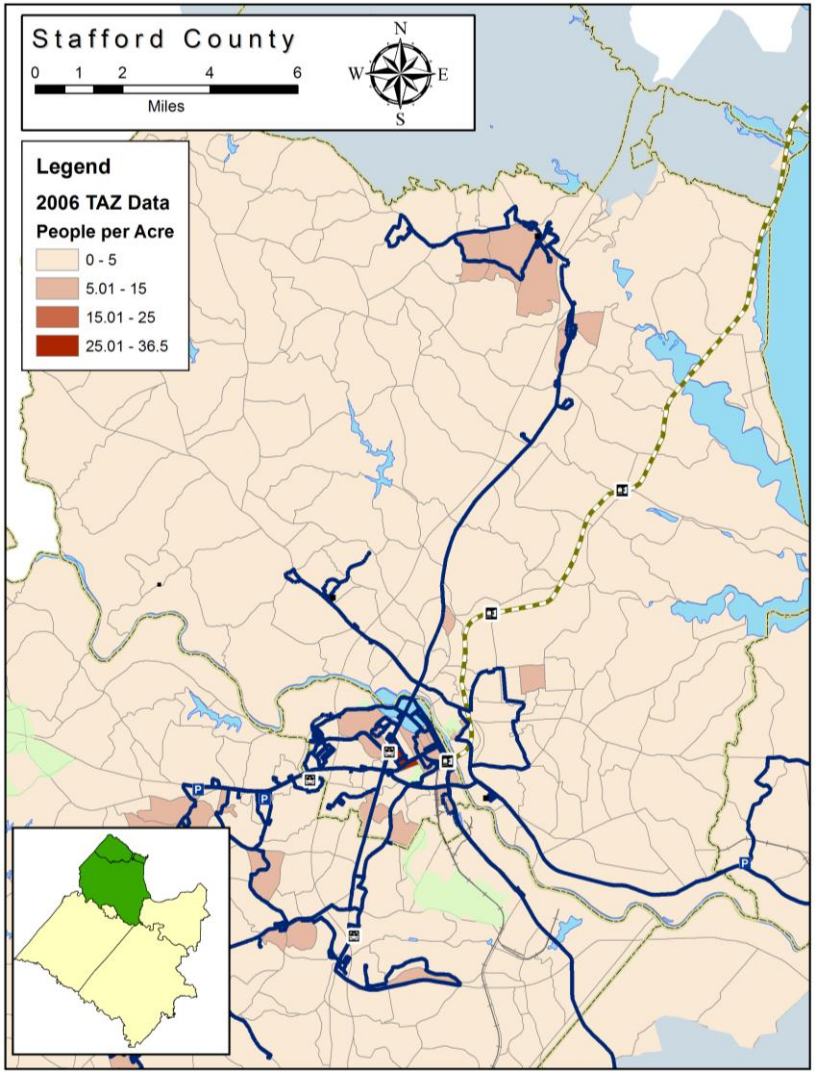



**FIGURE 3.44: 2015 POPULATION DENSITY - STAFFORD COUNTY**

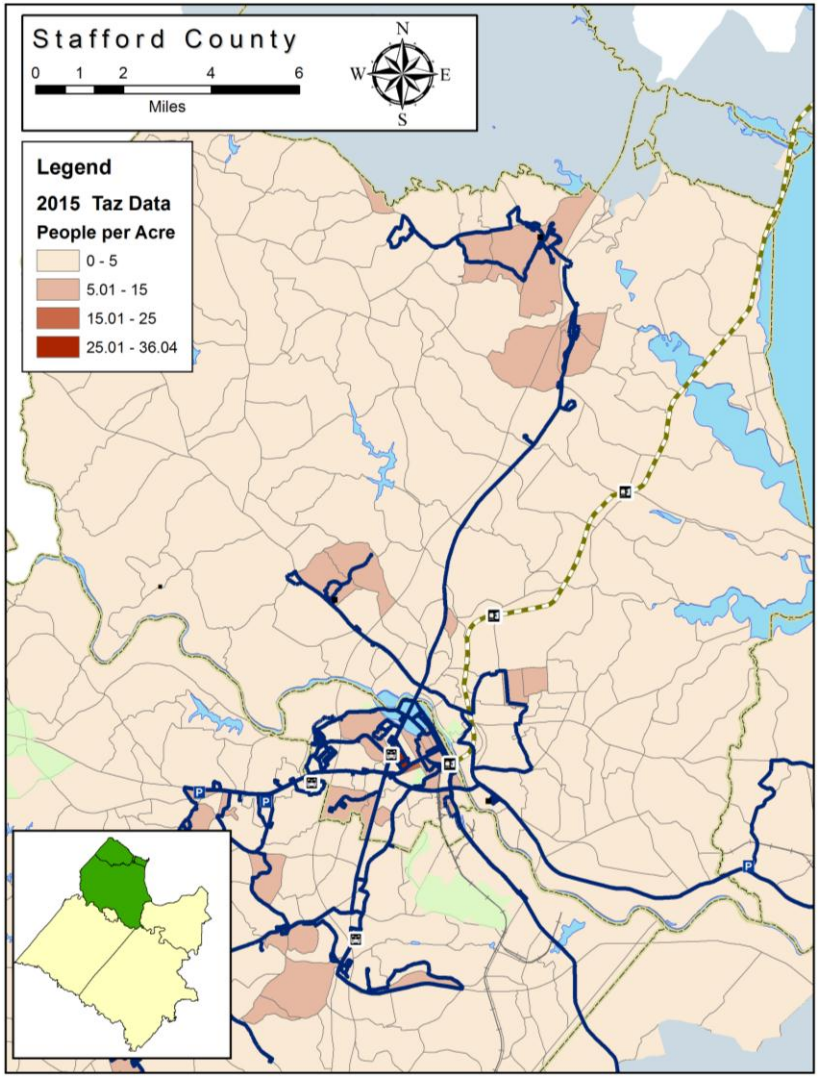


**FIGURE 3.45: 2006 POPULATION DENSITY - CAROLINE COUNTY**

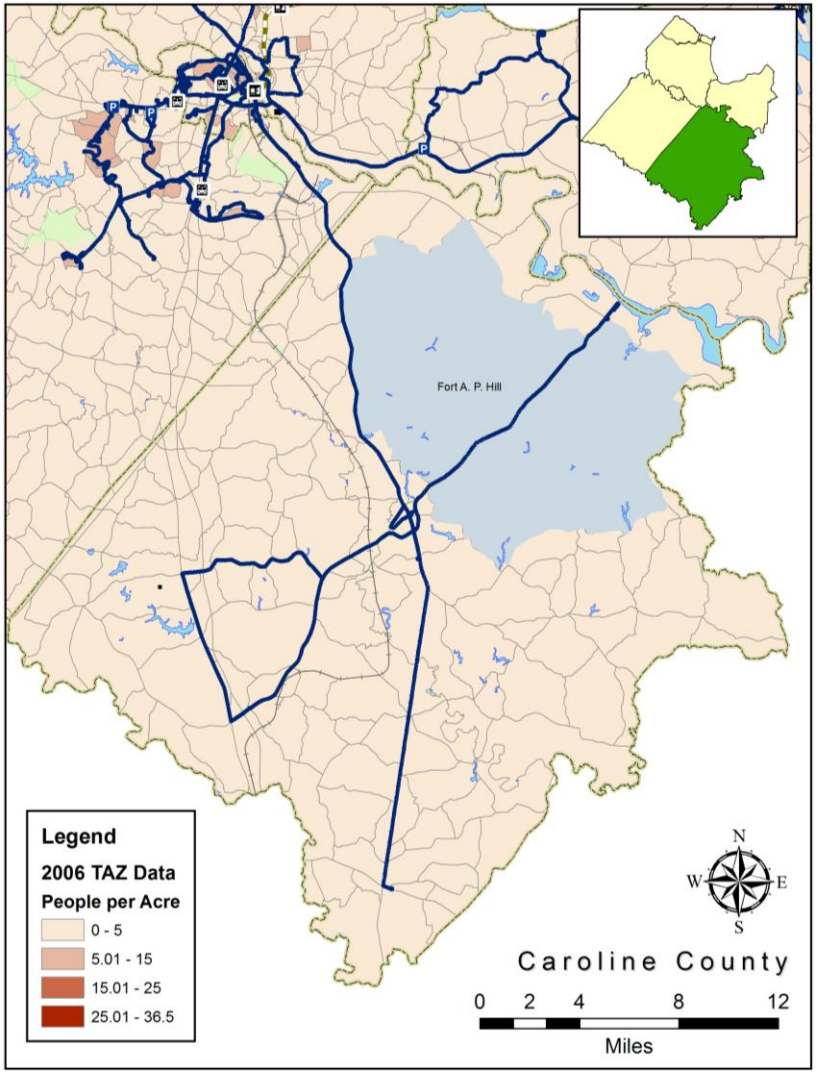
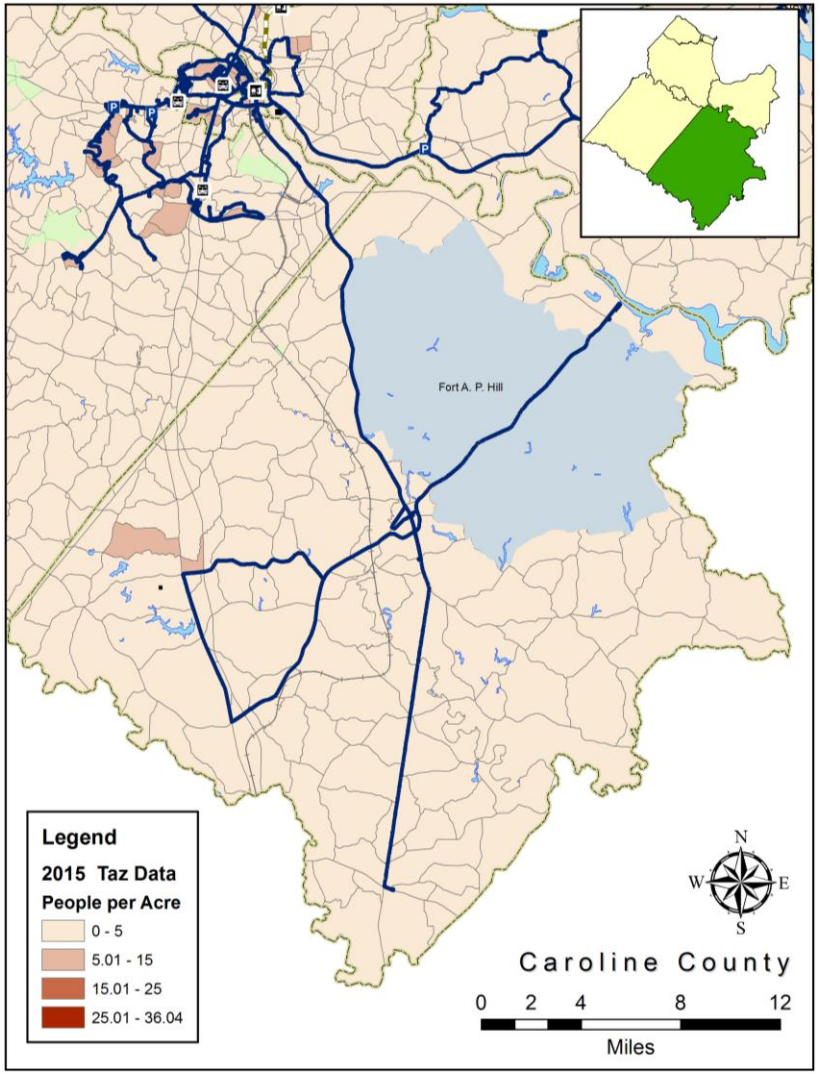



**FIGURE 3.46: 2015 POPULATION DENSITY - CAROLINE COUNTY**



## 3.11 Land Use Summary

The George Washington Region 2035 Long Range Transportation Plan provides the Fredericksburg Region with a planning document for long term transportation projects, including road improvements, bicycle and pedestrian facilities and public transportation. The planning document includes land use maps for the FAMPO region as of 2006, as shown in Figure 3.48.

In addition to the 2035 Long Range Transportation Plan, comprehensive planning documents and land use maps provide further insight toward future development and land use plans that could impact FRED service. The following provides a brief overview of development areas identified in the FRED jurisdictions' current comprehensive plans.

### City of Fredericksburg

The City of Fredericksburg's comprehensive plan was adopted in September 2007. The comprehensive plan identifies major transportation corridors where development is and should continue to be focused: Lafayette Boulevard, Princess Ann Street, William Street, Jefferson Davis Highway, Blue & Gray Parkway, Fall Hill Avenue, Cowan Boulevard and Dixon Street. While FRED currently provides service to these corridors, the comprehensive plan identifies the need to focus more FRED service toward downtown with increased frequencies and span of service. Figure 3.47 shows the existing land use for the City of Fredericksburg as shown in the 2035 Long Range Transportation Plan.

FIGURE 3.47: CITY OF FREDERICKSBURG EXISTING LAND USE

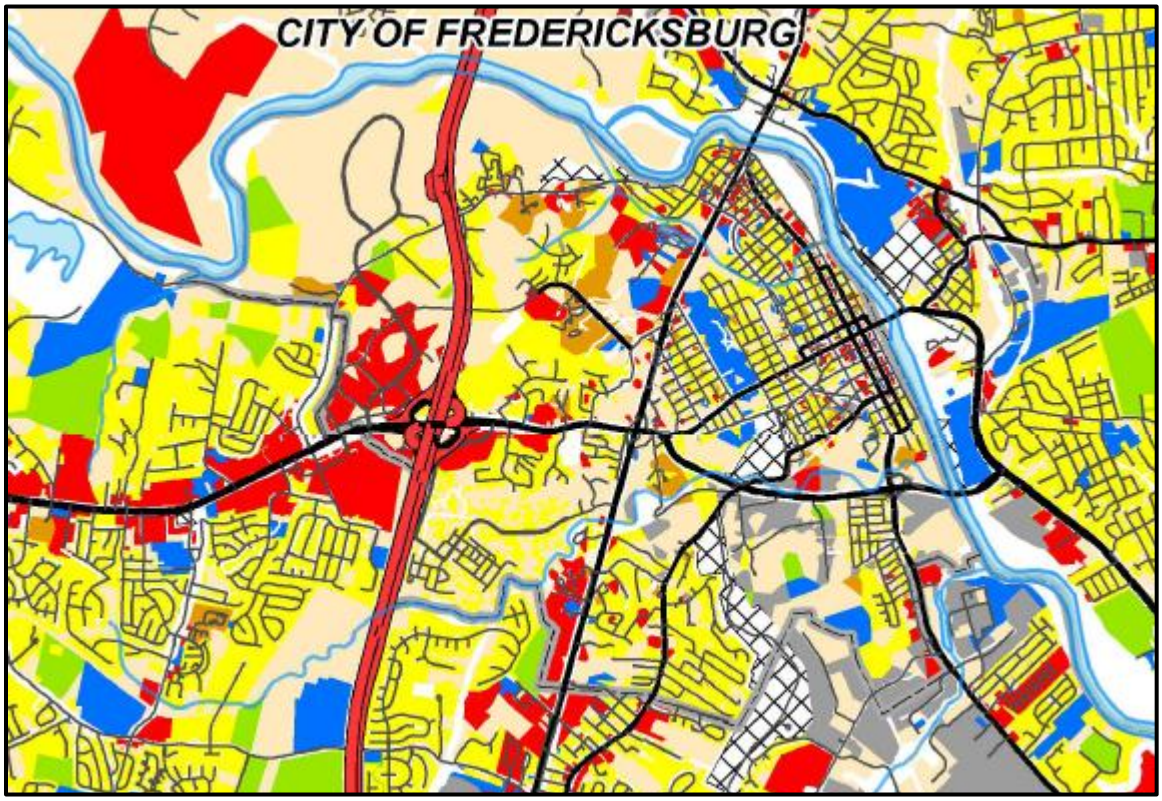
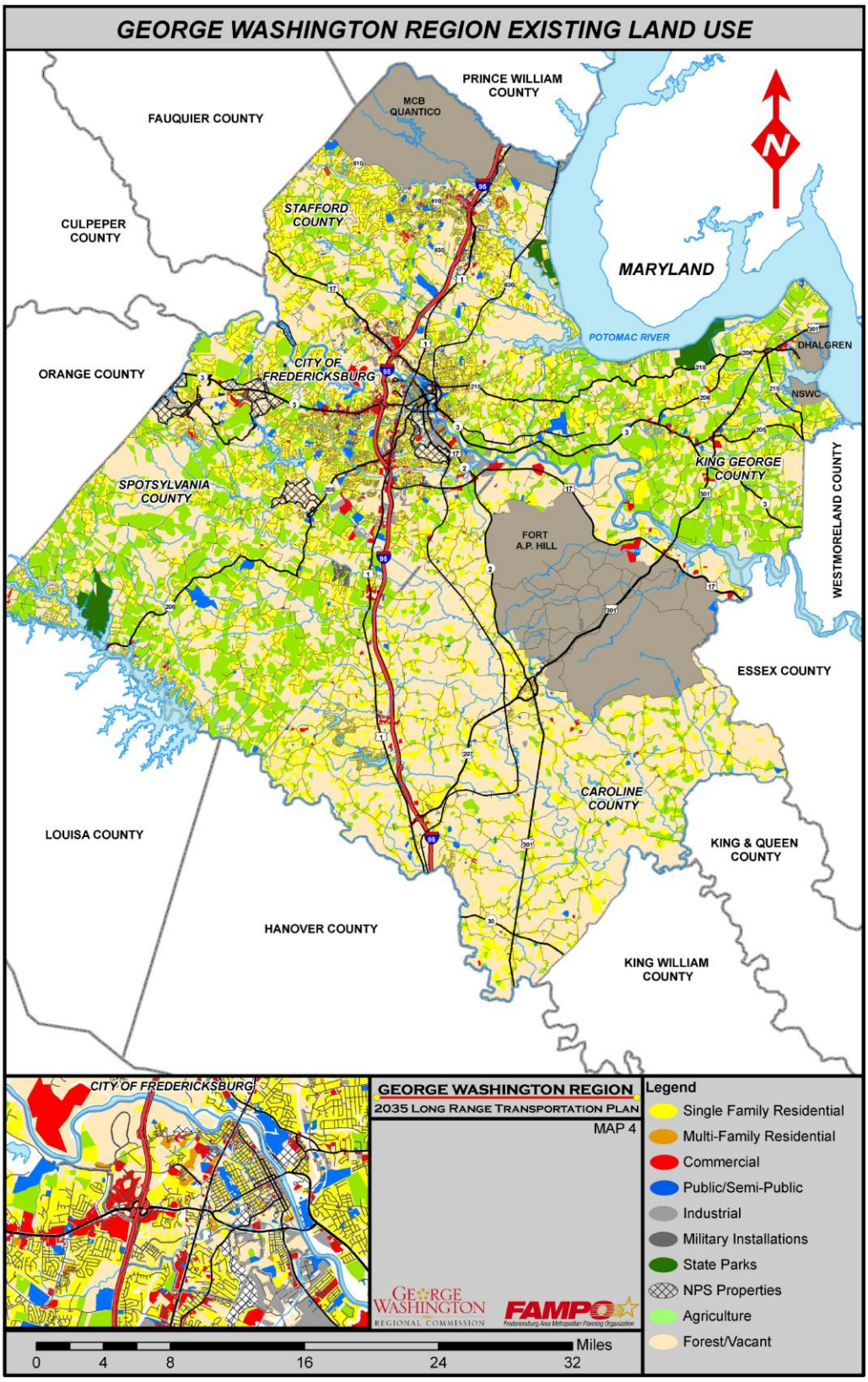


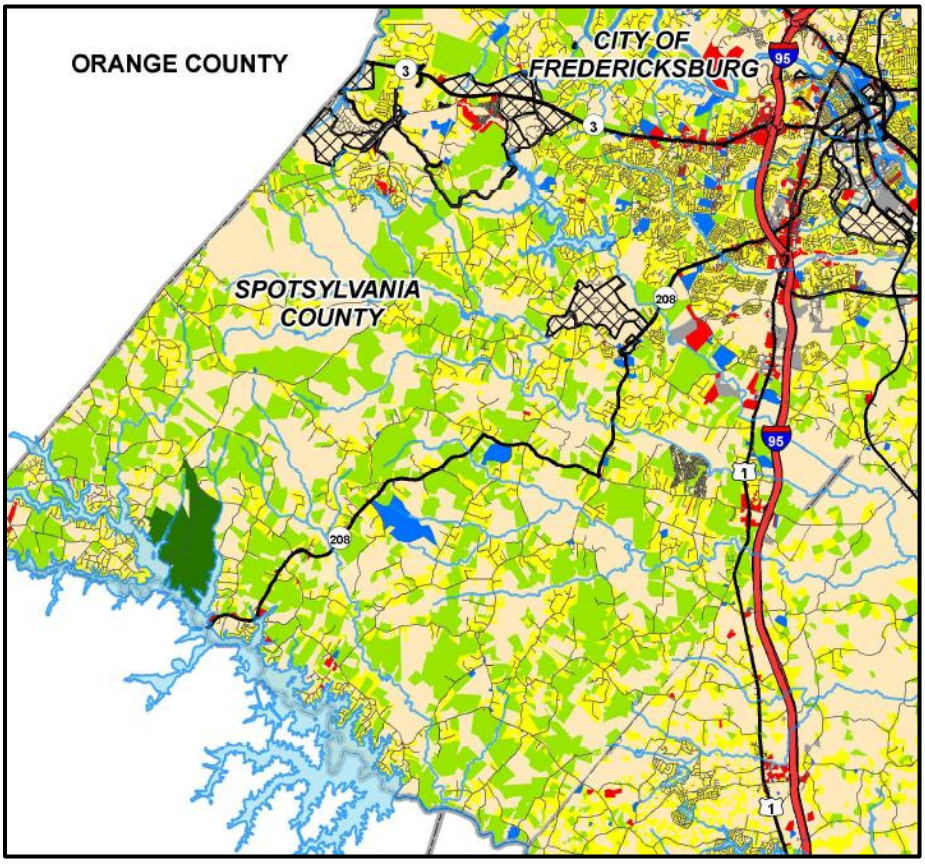
**FIGURE 3.48: GEORGE WASHINGTON REGION EXISTING LAND USE**
**2035 Long Range Transportation Plan**



## SPOTSYLVANIA COUNTY

Much of the transit supportive land uses in Spotsylvania County have some level of service from FRED. Figure 3.49 shows the existing land use for Spotsylvania County as defined by the 2035 Long Range Transportation Plan. In 2008, Spotsylvania completed a comprehensive plan that identifies urban development areas where development should be focused. Many of these areas are served by FRED service and include Courthouse Village Center, Thornburg, Towne Center Connector Road (not served by FRED), South Massaponax and Crossroads (not served by FRED).

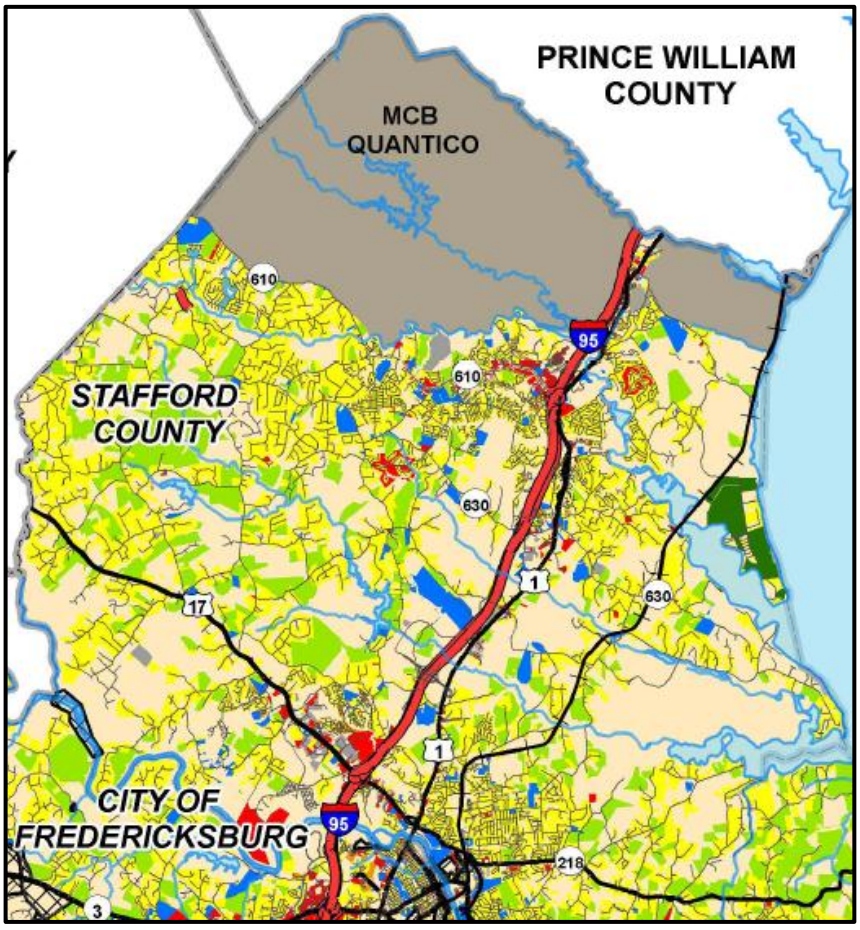
**FIGURE 3.49: SPOTSYLVANIA COUNTY EXISTING LAND USE**




## STAFFORD COUNTY

Stafford County is in the process of updating its comprehensive plan as this TDP is being completed. A draft version from May 2009 includes urban service areas and redevelopment areas. The urban service areas are identified as the I-95 corridor, Courthouse Road and Garrisonville Road. Redevelopment areas are identified as the Courthouse area, Southern Gateway (US17) and Boswell's Corner. FRED currently serves the major development corridors in Stafford County shown on the existing land use map from the 2035 Long Range Transportation Plan in Figure 3.50.

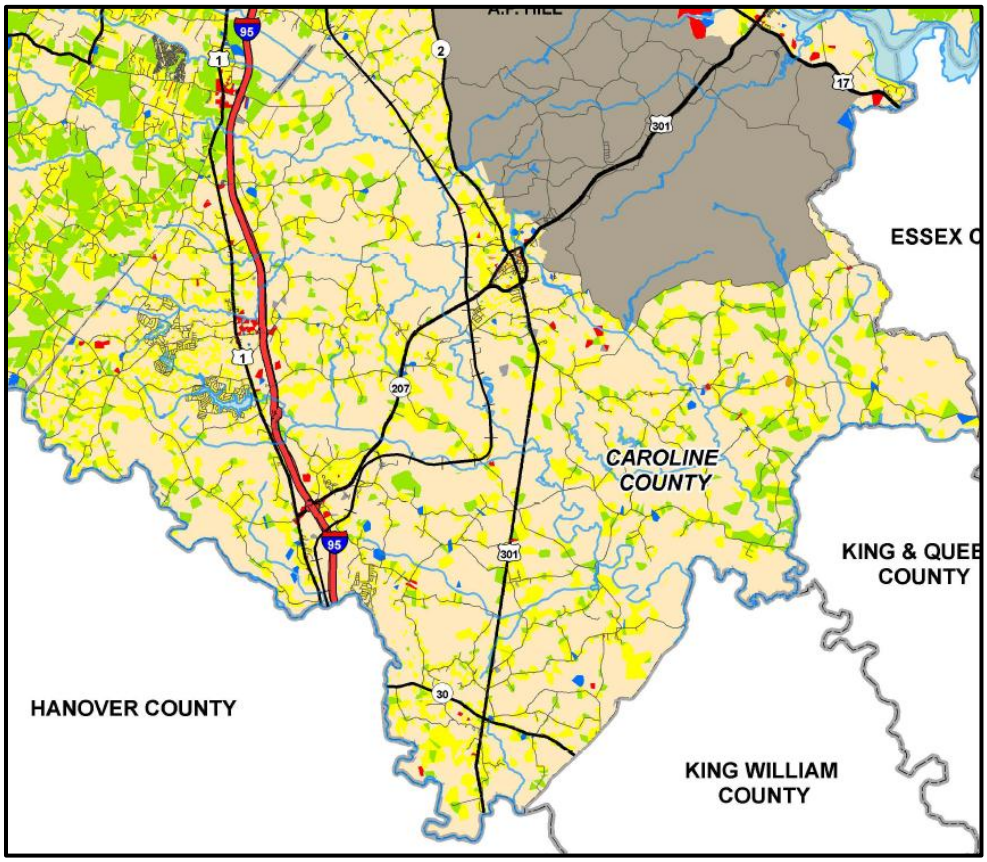
**FIGURE 3.50: STAFFORD COUNTY EXISTING LAND USE**




CAROLINE COUNTY

Caroline County's existing land use is largely low density single family and vacant land, as shown in Figure 3.51. The Caroline County comprehensive plan adopted in January 2010 does not identify any significant land use changes, with Bowling Green, Carmel Church and Ladysmith listed as the primary development centers with secondary village centers located at Port Royal and Dawn. FRED serves all of these centers.

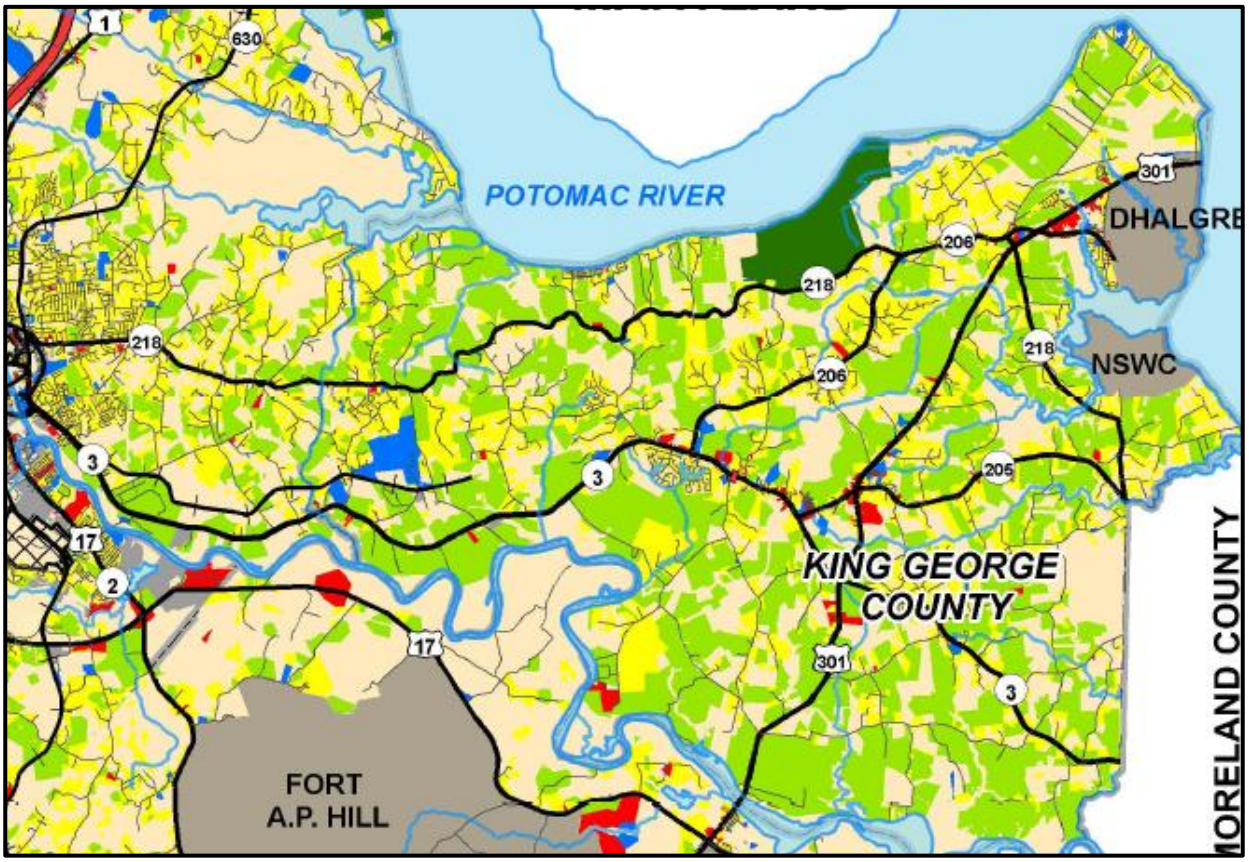
**FIGURE 3.51: CAROLINE COUNTYTY EXISTING LAND USE**




KING GEORGE COUNTY

King George County land use is made up of agricultural and low density residential areas. Small areas of commercial development are located along Route 3, Dahlgren and Fairview Beach, all of which are served by two FRED routes with limited service. Figure 3.52 shows the exiting land use for King George County as identified in the 2035 Long Range Transportation Plan. King George County completed its comprehensive plan in 2006 and identified major planning areas as Courthouse, Dahlgren, Route 3 West, Fairview Beach, Hopyard, Claudel and Oakland Park.

**FIGURE 3.52: KING GEORGE COUNTY EXISTING LAND USE**




## 3.12 BICYCLE AND PEDESTRIAN PLANS

The George Washington Region Bicycle and Pedestrian Plan identifies existing and planned bicycle and pedestrian facilities in the FRED service area. Figures 3.53 through 3.57 show existing and proposed trails, as well as planned improvements for the FRED service area as identified by the plan. Many of the existing and proposed trails have connections to FRED service. All of FRED buses have bicycle racks and in 2009, FRED routes carried 5,422 bikes.

**FIGURE 3.53: CITY OF FREDERICKSBURG BICYCLE AND PEDESTRIAN PLAN**

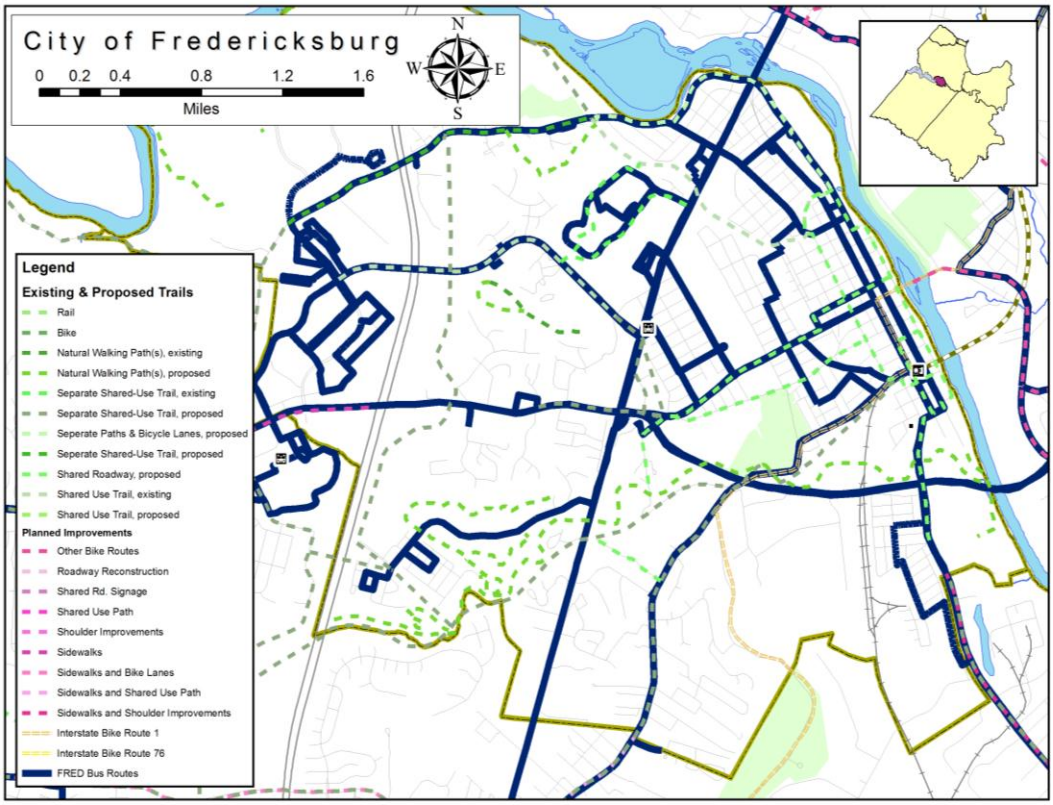



**Figure 3.54: Spotsylvania County Bicycle and Pedestrian Plan**

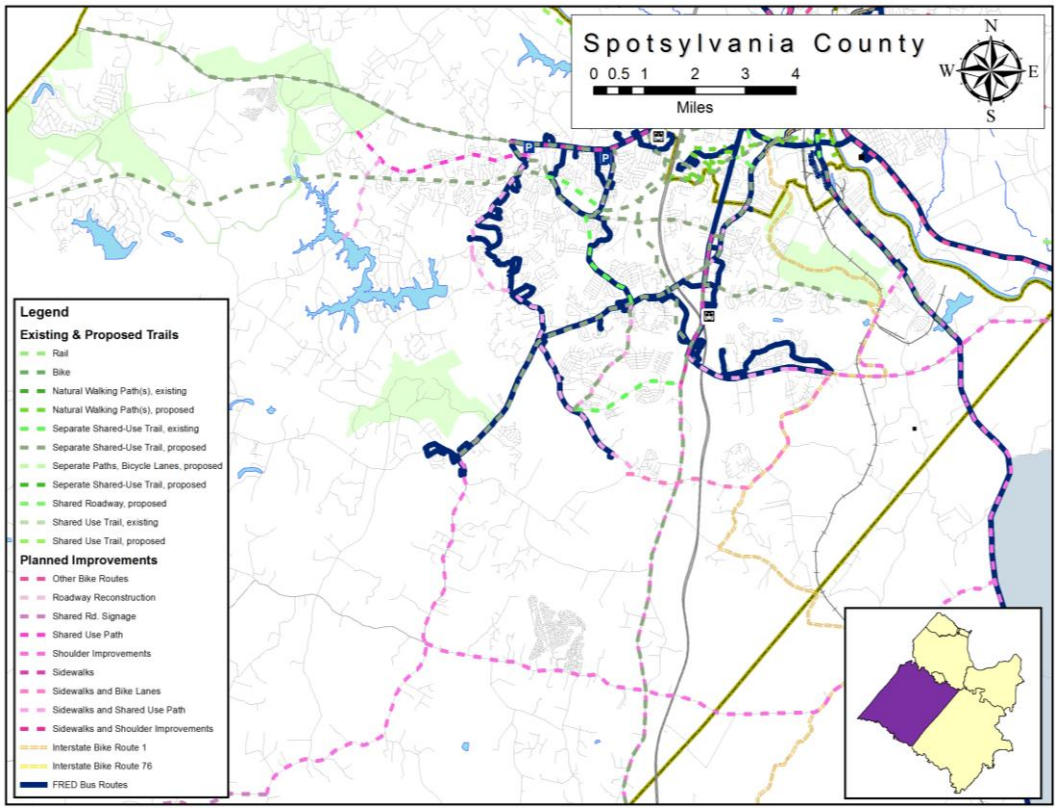


**FIGURE 3.55: STAFFORD COUNTY PEDESTRIAN AND BICYCLE PLAN**

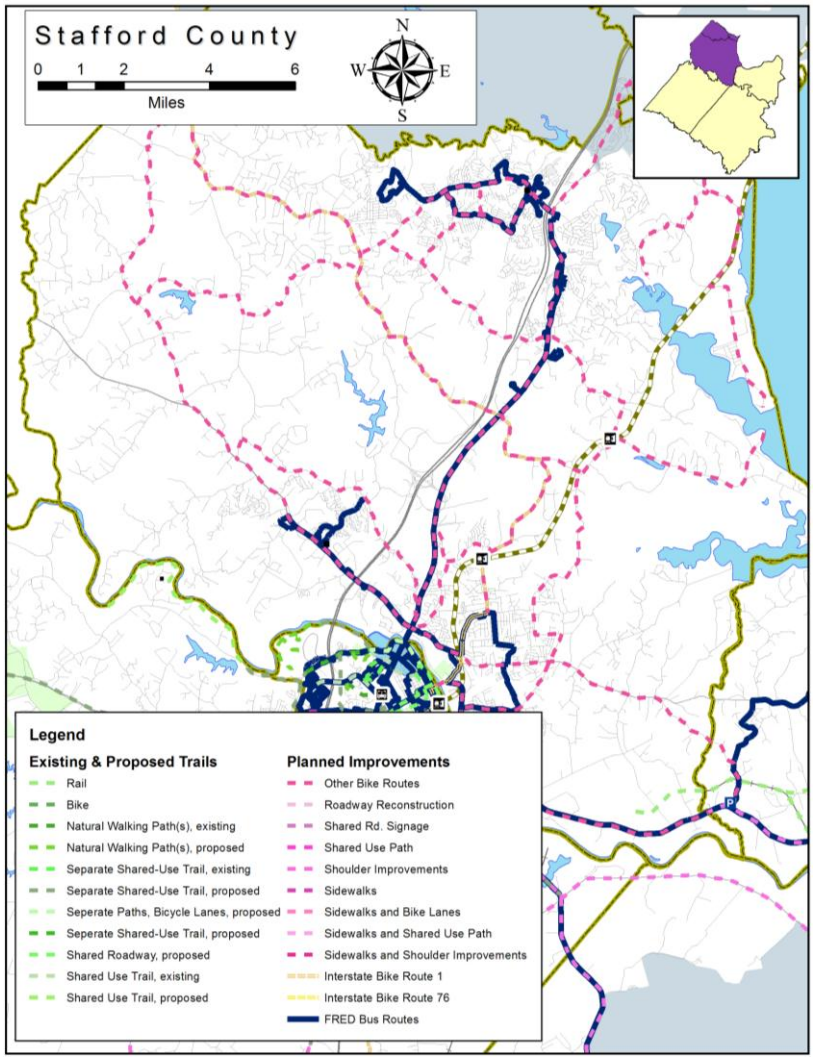



**FIGURE 3.56: CAROLINE COUNTY BICYCLE AND PEDESTRIAN PLAN**

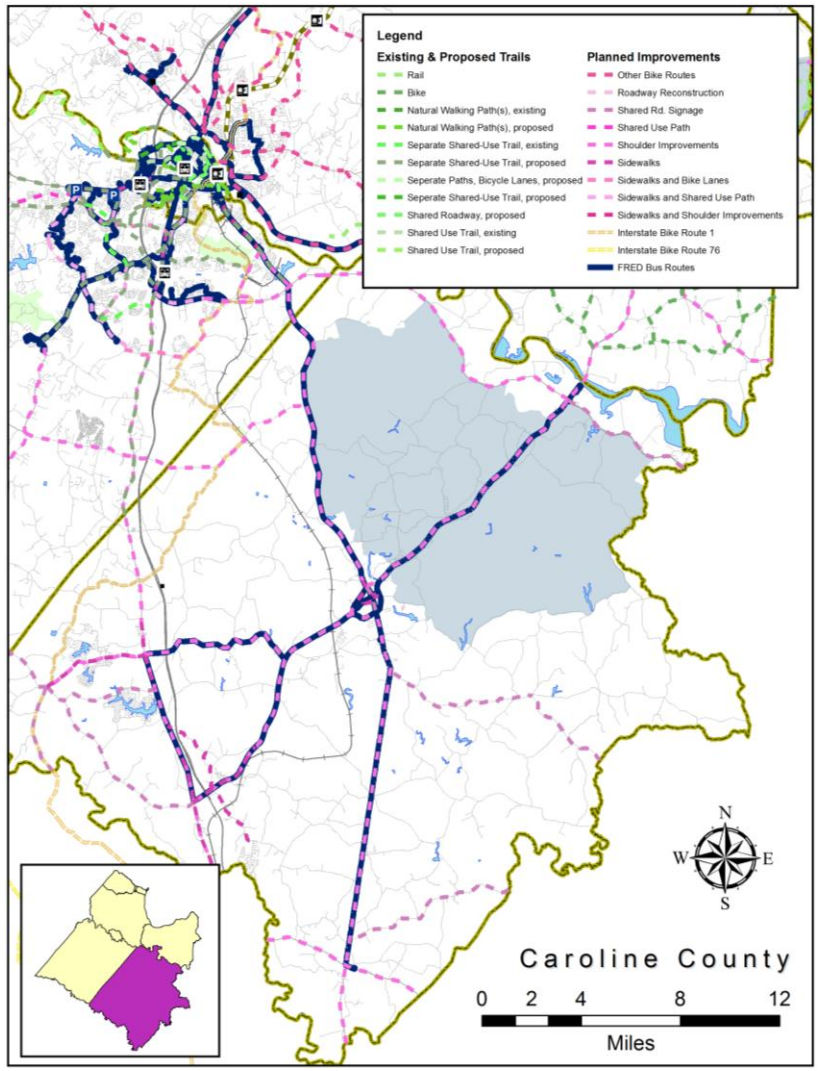
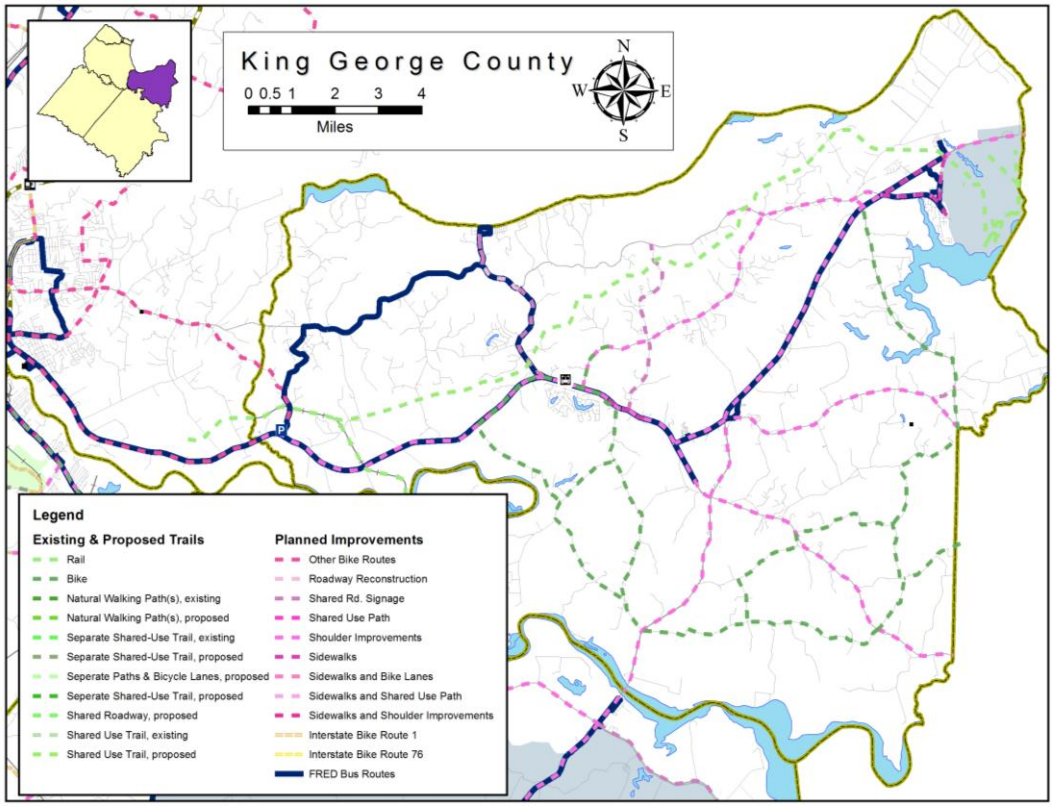


**FIGURE 3.57: KING GEORGE COUNTY BICYCLE AND PEDESTRIAN PLAN**



# 4.0 TRANSIT SERVICE AND FACILITY NEEDS

This chapter identifies potential unconstrained service and facility needs for the FRED service area. Service and facility/equipment needs are identified based on the evaluation conducted in previous chapters of this TDP, stakeholder meetings and demographic analysis. A meeting with FRED staff was also held to discuss potential service needs for inclusion in the TDP. Key findings that have been taken into consideration in identifying transit service and facility unconstrained needs are as follows:

1. A review of service effectiveness, cost effectiveness and service efficiency indicates FRED does a good job with the resources available.
2. FRED is heavily reliant on Federal funding sources.
3. Existing and future transit supportive areas are served by FRED; however, the level of service may be insufficient. For example, the frequency on certain routes, particularly in Spotsylvania County, is 120-minute headways.
4. Public outreach efforts revealed that the span of service hours on many FRED routes is not adequate for riders desiring to use transit to or from work.
5. Weekend service is limited to two downtown routes. This service is funded by the University 0f Mary Washington, focuses on UMW students and only operates when school is in session. There is a need for year-round weekend service to serve major destinations.
6. New and future retail and residential developments, such as Cosner's Corner, Lee Park and Idlewild, receive limited service, such as the VRE service to Idlewild and once per week service to Lee Park. As these areas continue to develop, demand for more service may be warranted.
7. As development along key corridors expands, existing FRED routes are stretched thin and new routes are needed to provide adequate service.
8. Routes in King George and Caroline Counties serve low density populations and require high revenue miles to operate the routes, which impacts how efficiently FRED operates.
9. FRED has a large service area, and thus, significant mileage and time is required when moving a bus from FRED Central to the beginning of the route or to replace a vehicle if a breakdown occurs.
10. Bus stop amenities are limited throughout the service area.
11. Other than FRED Central, transfer locations throughout the service area such as Lee's Hill and Stafford Marketplace are not owned by FRED or local jurisdictions and lack shelter, benches, and driver amenities.
12. FRED's service area ranges from the denser downtown area of Fredericksburg to the rural counties of Caroline and King George. Thus, FRED should consider the tradeoff between operating a smaller vehicle in the rural areas that may be more cost efficient versus running a vehicle that is interchangeable between all routes, both rural and urban.
13. Most of FRED's staff is part-time, which stretches resources thin, impacts employee morale, and complicates scheduling.
14. New route planning software would give FRED the tools to provide better online route information and improve future route planning.

15. The purchase of the existing maintenance facility will give FRED the opportunity to provide more in-house maintenance, thereby reducing expenses and improving fleet efficiency, reliability and availability.

Based on these findings, the following needs and service improvements have been identified for consideration for inclusion in this TDP. It is important to note that this list represents ***potential*** TDP improvements, unconstrained by budget and not prioritized. Recommended improvements for the TDP 6-year time period are identified in Chapter 5.

## 4.1 Unconstrained Service Needs

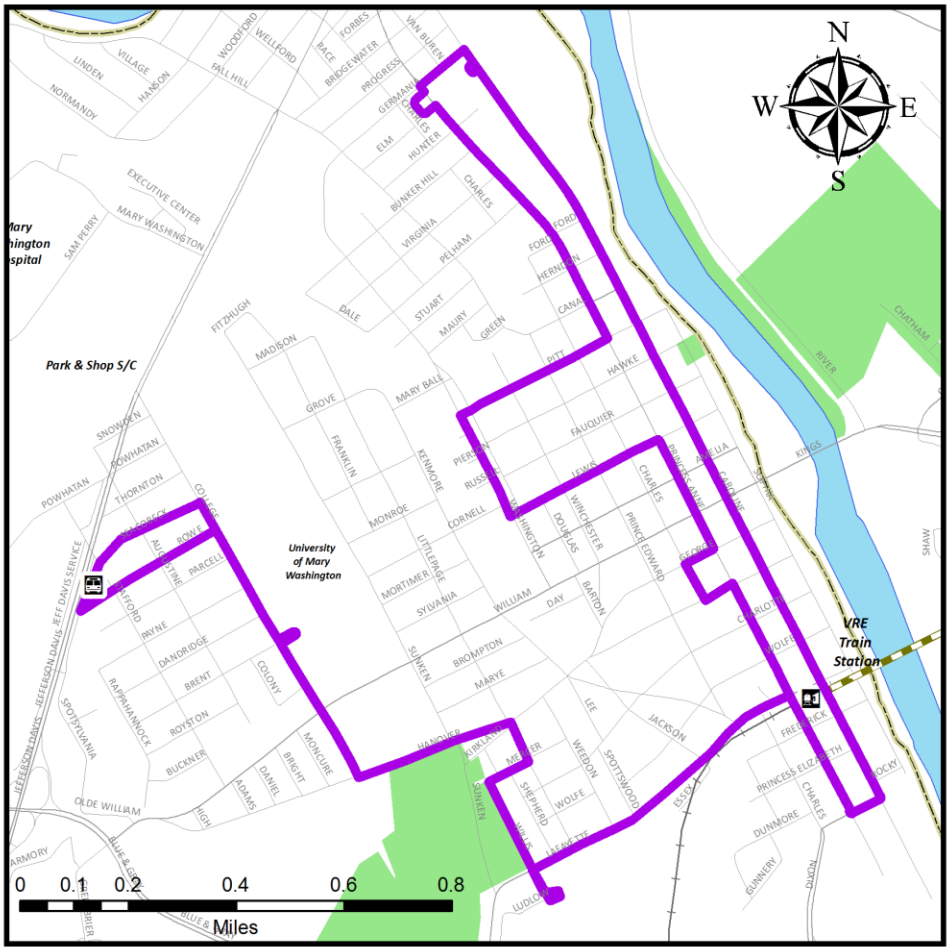
**Systemwide**

1. **Increase Weekday Span of Service:** Through discussions with FRED staff and public outreach efforts, it is evident that there is a need to increase weekday span of service hours to operate one hour earlier and one hour later on all City of Fredericksburg, Spotsylvania County and Stafford County routes. Additionally, public outreach revealed the need for Stafford County routes to run even later in the evening, similar to City of Fredericksburg routes. Increased hours of operation are proposed for the following routes:
    - **F1**: **7:30 a.m. - 9:30 p.m.** This route currently starts at 8:30 a.m. and ends at 7:30 p.m. Weekday service hours are proposed to increase one hour in the morning to 7:30 a.m. and two hours in the evening to accommodate the retail destinations along this route.
    - **F2: 6:30 a.m. - 9:30 p.m.** The proposed increase in weekday service hours for this route is one hour earlier and one hour later.
    - **F3: 6:30 a.m. - 9:30 p.m.** The proposed increase in weekday service hours for this route is one hour earlier and one hour later.
    - **F4: 6:30 a.m. - 9:30 p.m.** The proposed increase in weekday service hours for this route is one hour earlier and one hour later.
    - **F5: 7:30 a.m. - 9:30 p.m.** The proposed increase in weekday service hours for this route is one hour earlier and one hour later.
    - **D1: 8:00 a.m. - 8:00 p.m.** The proposed increase in weekday service hours for this route is one hour earlier and one hour later.
    - **D2: 7:00 a.m. - 9:00 p.m.** The proposed increase in weekday service hours for this route is one hour earlier and one hour later.
    - **D3: 6:30 a.m. - 8:30 p.m.** The proposed increase in weekday service hours for this route is one hour earlier and two hours later to accommodate retail locations along the route and later work shifts.
    - **D4: 7:50 a.m. - 8:30 p.m.** The proposed increase in weekday service hours for this route is one hour earlier and two hours later to accommodate retail locations along the route and later work shifts.
    - **D5: 6:00 a.m. - 8:00 p.m.** The proposed increase in weekday service hours for this route is one hour earlier and one hour later.

- **S1: 7:00 a.m. - 9:00 p.m.** The proposed increase in weekday service hours for this route is one hour earlier and one hour later.
- **S2: 7:00 a.m. - 9:00 p.m.** The proposed increase in weekday service hours for this route is one hour earlier and one hour later.
- **S3: 7:30 a.m. - 8:30 p.m.** The proposed increase in weekday service hours for this route is one hour earlier; however, later service along this route is not necessary.

2. **Weekend Service on Select Routes:** Major shopping destinations provide employment and key attractions for FRED patrons; however, other than FREDExpress service between UMW and Central Park when school is in session; there is currently no weekend service. Weekend service is an identified need for this TDP for the City of Fredericksburg Routes F1, F2, F3, F4 and F5; Stafford County Routes D2, D3, D4 and D5; and Spotsylvania County Route S1 and S2a. These routes were selected based on ridership and major retail destinations served by these routes. Proposed service hours would be similar to FREDExpress on Saturday from 8:30 a.m. to 9:30 p.m. and Sunday 9:30 a.m. to 6:30 p.m. with 60-minute frequencies. Route F5 on Saturday and Sunday is modified to serve major historic and entertainment destinations in the downtown area, as shown in Figure 4.1.

**FIGURE 4.1: PROPOSED ROUTE F5 WEEKEND SERVICE**



3. **Route Deviation Service:** As FRED continues to expand, current service operations and dispatch coordination may or may not be adequate for future service. FRED should continue to evaluate the needs of current and future transit riders as service continues to expand.
    - **Route Deviation versus Paratransit:** As FRED's service expands, the limitations of route deviation service can make scheduling and on time performance difficult to maintain. FRED should evaluate the pros and cons of providing a separate Paratransit Service versus the current route deviation service it now provides.
    - **Flex Route Service:** The Long Range Transportation Development Plan (LRTP) identifies flex route service in areas where densities do not support traditional fixed route service. Any reevaluation of FRED operations should consider whether flex route service would be feasible.
4. **Specific Route Needs:** The following identifies specific service needs by jurisdiction identified in this TDP.

**City of Fredericksburg**

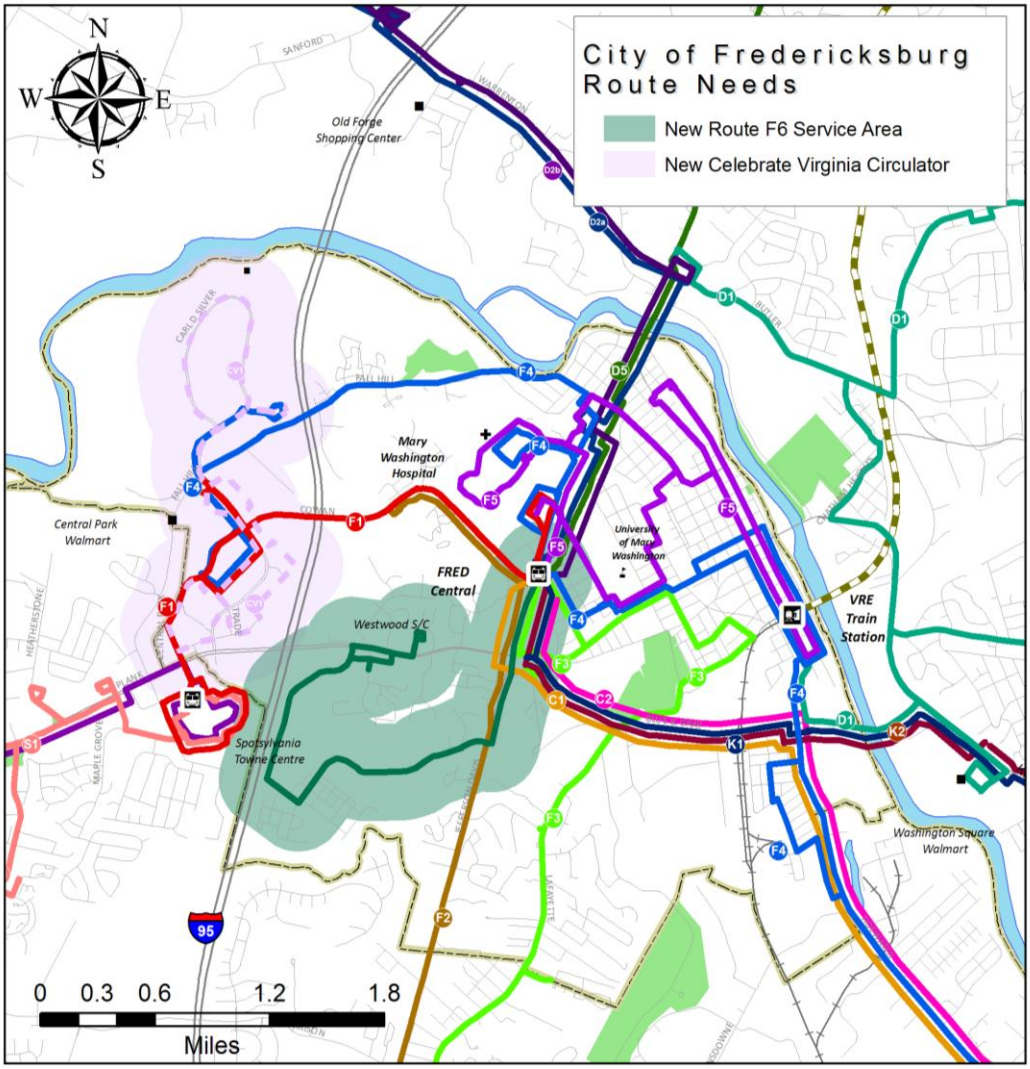
- **Celebrate Virginia Circulator**: With the eventual addition of the Kalahari Resort in Celebrate Virginia, there is a need for circulator service between the new resort, hotels, Expo Center and the Central Park commercial area. Proposed service hours would be from 10:00 a.m. to 10:00 p.m. on weekdays, 10:00 a.m. to 11:00 p.m. on Saturday and 10:00 a.m. to 7:00 p.m. on Sunday with 30-minute service frequencies. The route would provide service from the hotels on Hospitality Lane, the Expo Center, Kalahari Resort, and retail shops in Central Park. This circulator service would also allow Route F1 to make fewer stops inside Central Park and provide more coverage around Spotsylvania Towne Centre, as described in the next item. Additionally, service between the hotel/tourism locations at Celebrate Virginia to the historic and tourist location in downtown Fredericksburg may also be warranted.
- **Spotsylvania Towne Centre:** The redevelopment of Spotsylvania Towne Centre, which is served by Routes F1 and S1, has created a need to provide service to additional stops around the mall. Restructuring or splitting Route S3 and extending the route to Spotsylvania Towne Centre would also create a new route connection at this destination.
- **Service to Cosner's Corner, Lee Park, and Idlewild**: New development along Jefferson Davis Highway has created a need for service south of the Lee's Hill transfer hub. A new transfer hub at Cosner's Corner would provide connections to the routes identified below.
    - Route F2: This route should be modified to serve the new transfer hub at Cosner's Corner instead of Lee's Hill Center, which is served by Route F3. An untimed transfer can be made at Lassen/Lafayette for patrons wishing to continue to Lee's Hill destinations from Route F2.
- **New service:** Route F6 is a proposed new route from FRED Central along US 1 through the Idlewild community, Gateway Blvd, and Plank Road to Stop #15 (Altoona Drive) and Stop #34 (Westwood Shopping Center). The stops along Plank Road are currently served by Route F1. This new route would provide service to the Idlewild community, which is not currently

served by regular transit, and eliminate the need to serve the Westwood Shopping Center and Altoona Rd by Route F1, thus allowing more time on F1 to serve the back of Spotsylvania Towne Centre and Eagle Village. This route would operate on weekdays from 7:00 a.m. to 9:00 p.m. with 60-minute headways.

- **Increase Route Frequency**: There is a need to increase frequencies on more productive Routes F1, F3, F4, and F5 to 30-minute headways.

Figure 4.2 shows the proposed City of Fredericksburg unconstrained needs.

**FIGURE 4.2: CITY OF FREDERICKSBURG UNCONSTRAINED ROUTE NEEDS**



**Spotsylvania County**

- **Increase Route Frequency:** 120-minute service frequencies are inadequate to serve the needs of FRED patrons in Spotsylvania County. Sixty-minute service frequencies should be added to Routes S2 and S3.
- **Restructure Routes:** The Spotsylvania routes are long and have inadequate time available to complete the route within the 60-minute headway, particularly during rush hours. One or two additional routes should be created to restructure service in the county and allow for 60-minute headways. Additionally, service should be provided to Cosner's Corner, with a transfer hub (as described in the facilities section) located in the area. Specific route recommendations are as follows:
    - Route S1: Service to Lee's Hill Center should be eliminated and replaced with service to a Cosner's Corner transfer hub. Passengers that need to travel to Lee's Hill Center would be able to connect to Route S2a at Cosner's Corner.
    - Route S2: This route should be split into two routes with 60-minute service on each. From Marshall Center to Cosner's Corner, Route S2b would travel on Southpoint to serve the Walmart and continue to Cosner's Corner. Additional stops at the new Courthouse Village development is also warranted along this route. A second route, S2a, would provide existing service between Lee's Hill, Cosner's Corner and Germanna Community College. In this scenario, the route travels from Lee's Hill to the existing stops on Southpoint Parkway, turns into Cosner's Corner to make an untimed connection to the transfer hub, crosses over I-95 to Spotsylvania Hospital, continues to cross Mills and serve Germanna Community College, then continues east to serve the residential area. The route returns to Lee's Hill, with a stop at Cosner's Corner and the existing Southpoint stops.
    - Route S3: This route should be split into two routes with 60-minute headways throughout. The first route would be extended on Plank Road to serve Spotsylvania Towne Centre instead of the Ukrops, and would end at Courthouse Commons Shopping Center. A second route would provide service from Courthouse Commons on Smith Station Road to the YMCA, Spotsylvania Parkway to serve Lee Park, and Jefferson Davis Highway to the Cosner's Corner transfer hub.
- **Spotsylvania VRE Station:** Service to the proposed VRE station in Spotsylvania County from Lee Park and other residential areas may be warranted when this station is complete. Currently, the proposed site of the station is located on US 17 (Mills Drive); with a VRE feeder route (VS2) proposed from residential areas on Spotsylvania Parkway to the new rail station.
- **Plank Road (Rt. 3) High-Quality Transit Corridor:** Traffic congestion along the Route 3 corridor warrants enhanced transit infrastructure to accommodate the travel needs from Gordon Road to downtown Fredericksburg. FAMPO recently completed a Route 3 Corridor Transit Study in July 2010 which provides near term, short range and long range transit enhancements along Route 3 in conjunction with the addition of Transit/HOV lanes. The study recommends Transit Signal Priority (TSP) to improve transit travel time via a

transmitter that would give FRED buses a longer green light and shorter wait at red lights (green extension/red truncation) at major intersections. TSP is recommended to occur in conjunction with the addition of Transit/HOV lanes along the corridor at the following intersections along Route 3: Gordon Road; Old Plank Road/5-mile Road; Rutherford Drive/Chewing Lane; Ukrops/PNR; Salem Church Road; Heatherstone Drive; Taskforce Drive; Bragg Boulevard; Spotsylvania Mall Drive/Central Park Blvd.; Carl D. Silver Parkway; Gateway Blvd./Ramseur Street; Altoona Drive; Mahone Street; Development Entrance; and Huntington Hills Lane. TSP is also recommended on Route 1 at Westmont Dr/Westwood Dr; Spotsylvania Avenue; and Cowan Boulevard. The study identifies improved bus stops, enhanced bus stops and super stops along the corridor. While Transit/HOV lanes and TSP improvements may or may not occur in the timeframe of this TDP, existing bus stop improvements along the corridor can be implemented in the near term as a first step. In accordance with the study, improved bus stop facilities with ADA accessible concrete pads, benches, shelters, appropriate lighting and route signage should be added where needed at existing bus stops along Route 3 including Gordon Road PNR; Kilarney Drive; Ukrops/PNR Entrance; Ukrops PNR; Spotsylvania Towne Centre; Altoona Drive and Westwood Shopping Center. While some of these locations need minimal improvements, others may need a greater investment. Figure 4.3 shows the recommended stops as identified in the Route 3 Corridor Study.

**FIGURE 4.3: RECOMMENDED STATION/STOP TYPES FROM ROUTE 3 CORRIDOR STUDY (SOURCE: FAMPO)**

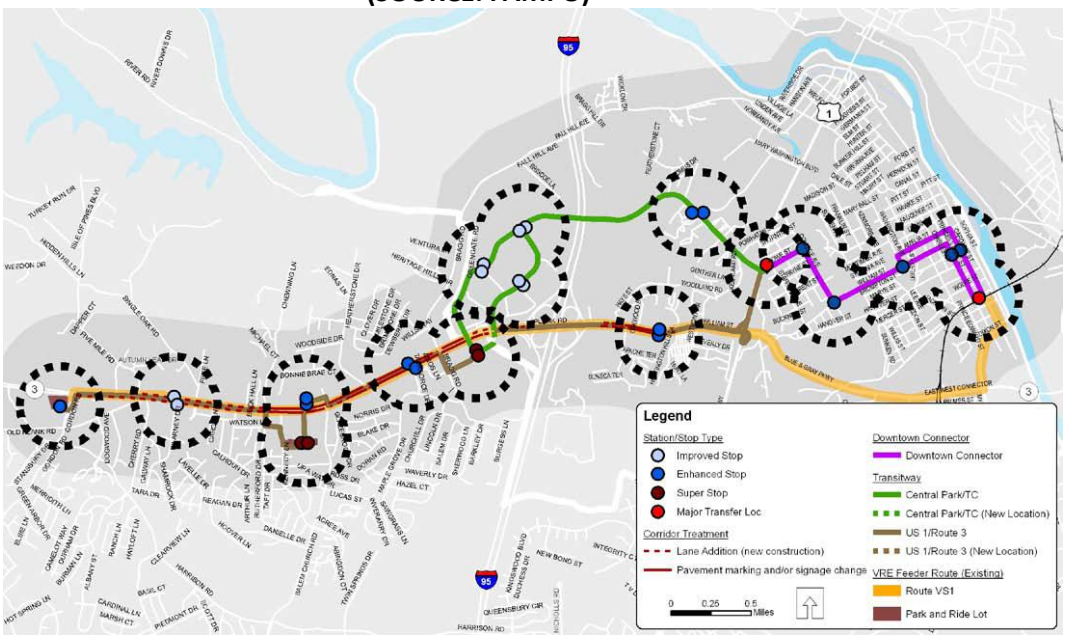
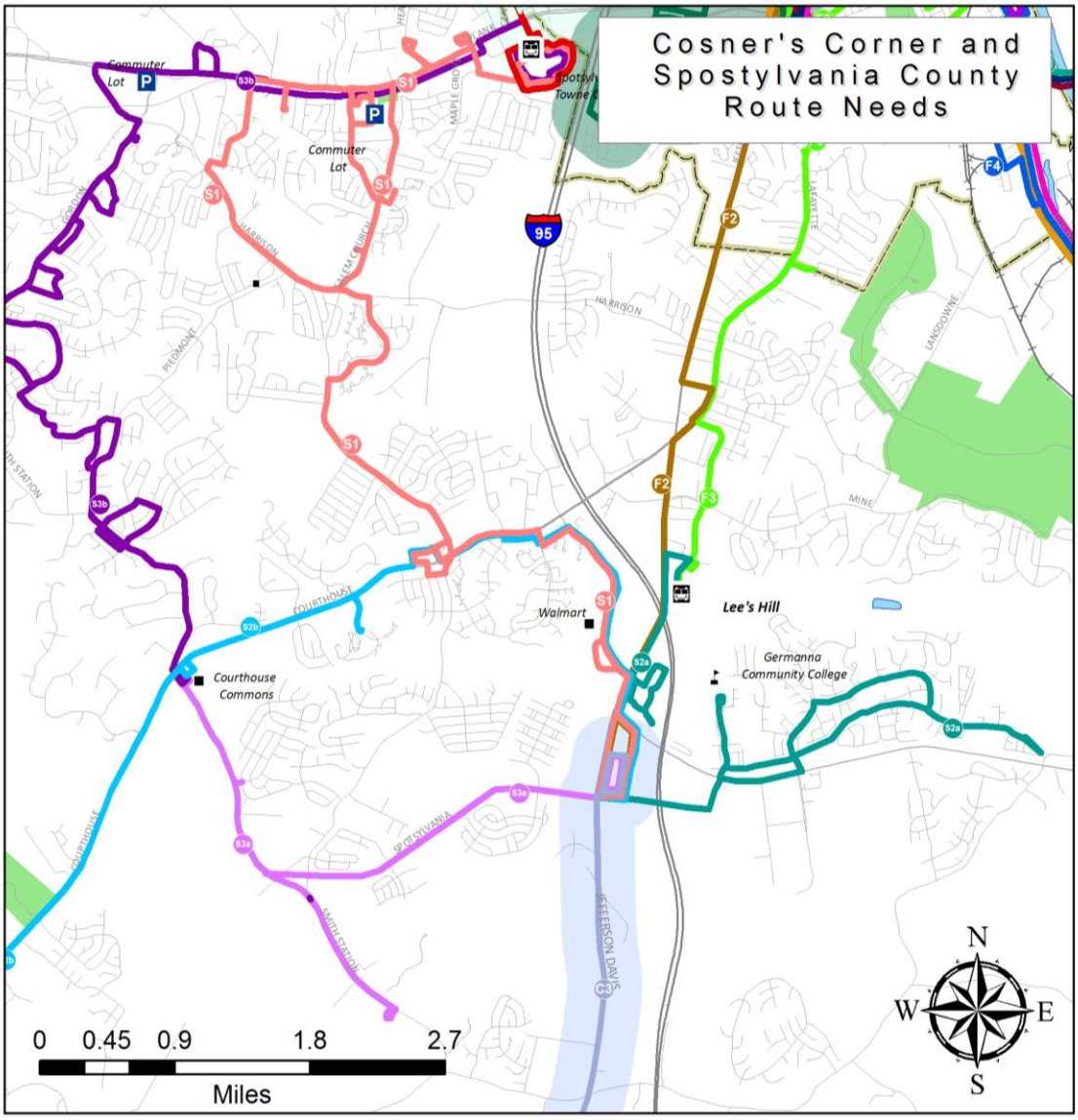



Figure 4.4 shows the Spotsylvania County route unconstrained needs and Cosner's Corner transfer hub.

**FIGURE 4.4: SPOTSYLVANIA COUNTY UNCONSTRAINED ROUTE NEEDS**



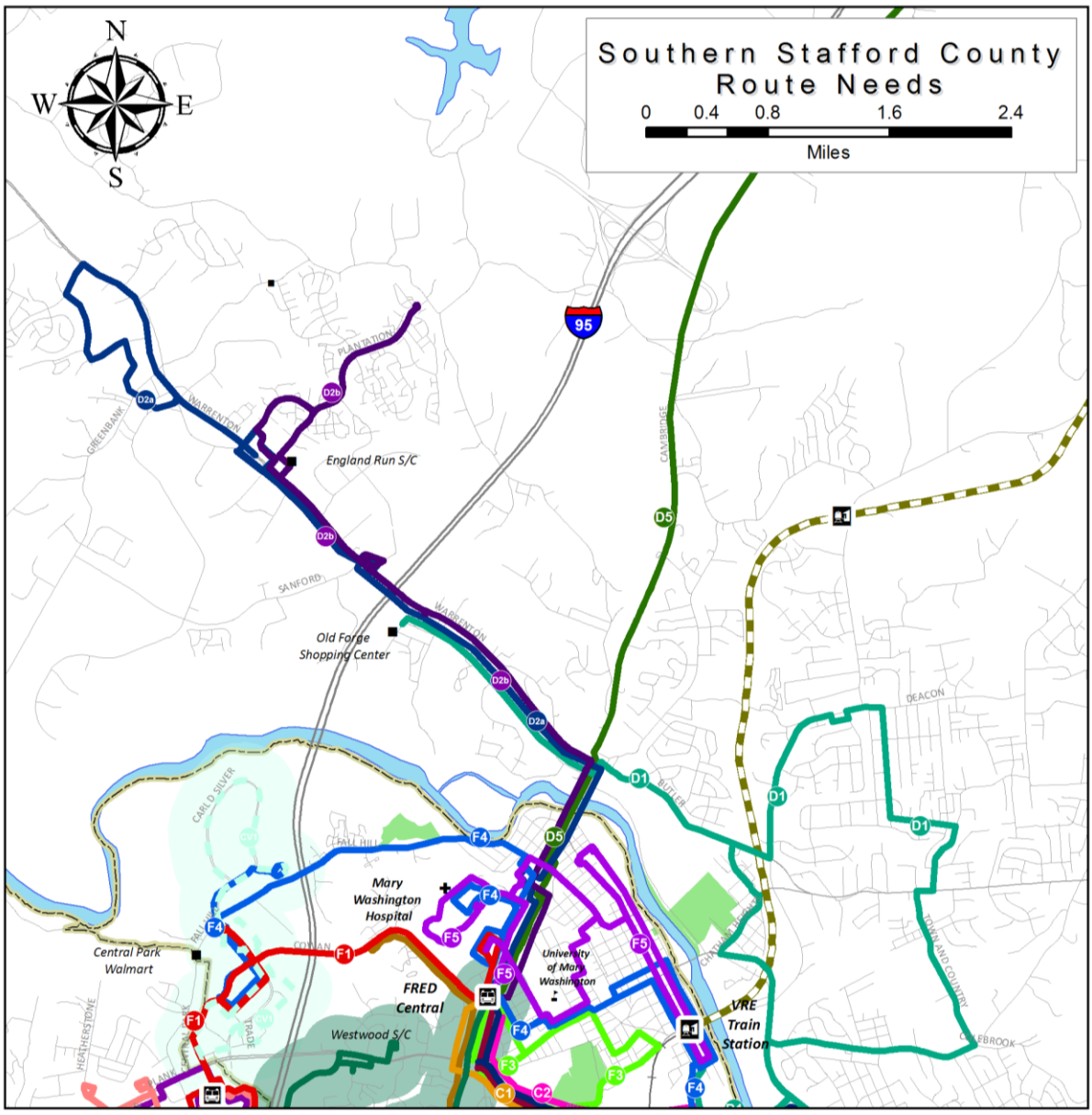

## Stafford County

- **Increase Span of Service:** During the public outreach in Stafford County, FRED patrons expressed the need for earlier and later service on Stafford County routes in order to accommodate work schedules and make connections to other routes in the system. An increase in the span of service hours, as identified above, is recommended for all Stafford County routes D1 through D5. No change is recommended for the commuter shuttle Route D6.
- **Increase Route Frequency:** This TDP identifies a need to increase service frequency to 30 minutes on the Northern Stafford Shopper Loop Route D3 and Route D5 from the Stafford County Courthouse to FRED Central. This would improve travel time and reduce wait time for patrons traveling between Northern Stafford County and FRED Central.

- **Service on Warrenton Road:** Increased development on Warrenton Road (US 17) has created the need for an additional route to supplement the service Route D2 currently provides. This TDP recommends two routes, as shown in Figure 4.5. The first Route D2a would provide service from the Walmart on Village Parkway/UMW Graduate Campus along Warrenton Road, serving existing stops along Warrenton Road, and US 1 to FRED Central. An added stop near Falmouth would provide an untimed transfer to Route D5. FRED patrons expressed the need for additional stops traveling south on Jefferson Davis Highway along Route D2 in Fredericksburg prior to reaching FRED Central. The second route on Warrenton Road would provide the existing service on Plantation Drive, and would continue on Warrenton Road to FRED Central.

Figure 4.5 shows the Stafford County unconstrained route needs.

**FIGURE 4.5: SOUTHERN STAFFORD COUNTY UNCONSTRAINED ROUTE NEEDS**



**Caroline County**

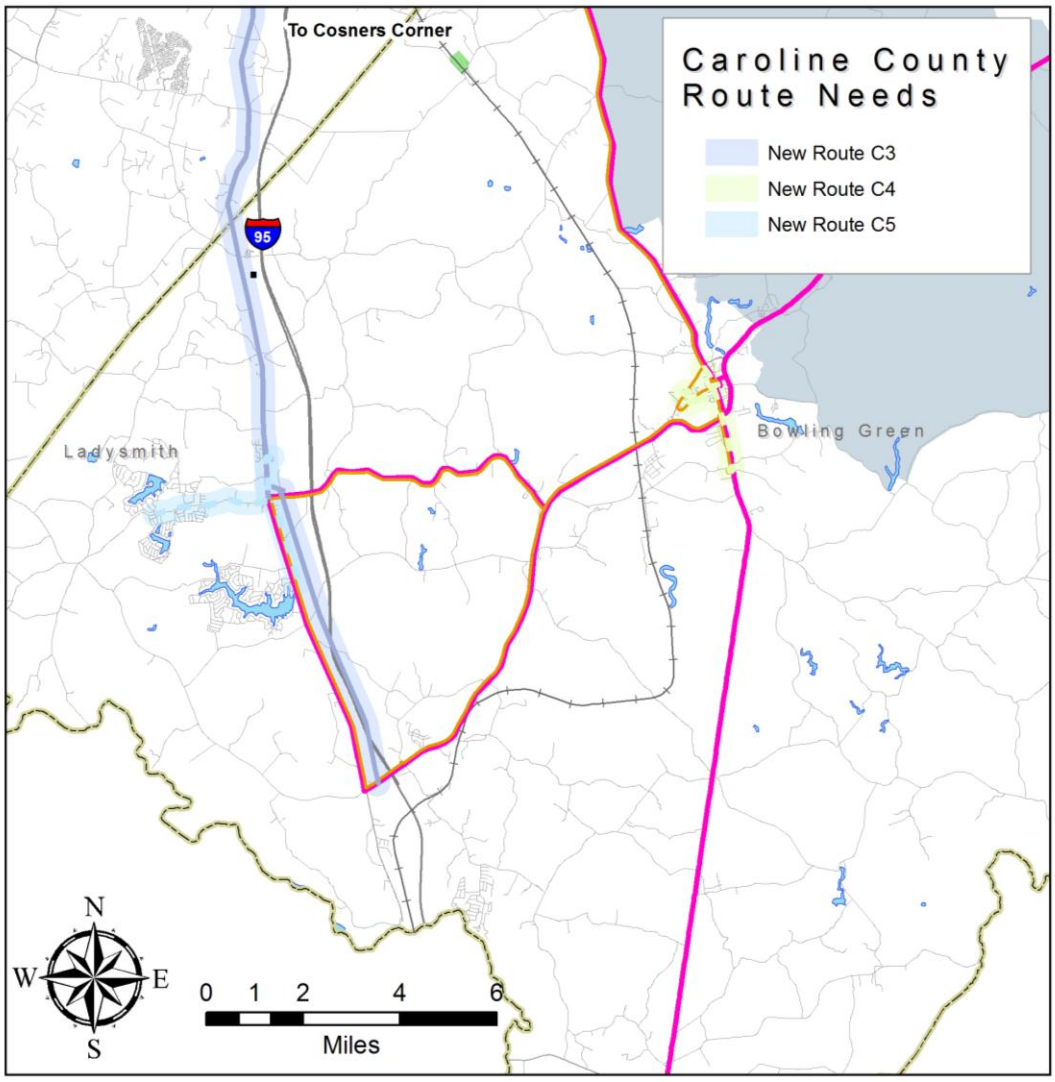
- **Improved Service Frequencies:** Routes C1 and C2 in Caroline County have limited service frequencies of 120 minutes. Residents of the county would benefit from 60-minute service frequencies along these routes.
- **Community Circulators:** Caroline County is a low density, mostly rural area with the communities of Bowling Green, Ladysmith and Carmel Church providing the bulk of current and future development in the county. While previous demand for transit service in these communities has been low, as these areas develop, community circulators would provide an added benefit for residents in these more populated areas of the county. Community circulators are identified for Bowling Green and Ladysmith. These routes are assumed to operate from 9:00 a.m. until 5:00 p.m. with 60-minute service frequencies on weekdays. Additionally, the proposed Carmel Church Transit Oriented Development would warrant circulator service to address regional and local transit needs.
- **Service to Cosner's Corner:** The communities of Ladysmith and Carmel Church are located on Jefferson Davis Highway (Rt. 1) south of Cosner's Corner. Residents of these communities would benefit from direct service to Cosner's Corner. Thus, a limited stop route from Carmel Church and Lady Smith to a Cosner's Corner transfer location is identified as a need in this chapter. This route is assumed to operate at 120-minute frequencies from 9:00 a.m. until 5:00 p.m. on weekdays.
- **VRE Service:** The proposed Spotsylvania VRE station will provide additional opportunities for VRE Feeder Service to existing and future development in Caroline County. While no routes are defined in this chapter, future development along Tidewater Trail may provide the need to add VRE feeder service to the new station.

Figure 4.6 on the following page shows the Caroline County unconstrained route needs.

**King George County**

- **Community Circulators:** Like Caroline County, King George County contains mostly rural, low density development, with higher densities focused around Dahlgren Naval Surface Warfare Center and along portions of Kings Highway. As King George County develops, community circulators may provide an additional transit benefit to these residents. This TDP identifies a community circulator in the Dahlgren Community as a supplement to the current King George County Route K1, with 60-minute service frequencies on weekdays from 9:00 a.m. until 5:00 p.m.
- **Fill in Stops on Kings Highway**: As development expands east on Kings Highway (Rt. 3) from Fredericksburg, there will be an increased need to add stops on the existing King George routes. The emerging development of Hopyard Farms near Dogue is one example where additional stops may be needed in King George as the community continues to develop.
- **King George Gateway:** As development of King George Gateway progresses, which will include a Walmart and UMW's Dahlgren Education and Research Center, additional or improved service to this area may be warranted.

**FIGURE 4.6: CAROLINE COUNTY UNCONSTRAINED ROUTE NEEDS**




**FREDExpress**

- **UMW Routes**: No changes are proposed in this TDP for UMW service. As UMW expands new campuses throughout the region (such as the graduate school in Stafford and proposed research center in Dahlgren), the need for additional service may warrant further study.

Figure 4.7 shows the potential fixed route adjustments for the TDP Needs Plan and Figure 4.8 shows the proposed VRE Feeder Service.

**FIGURE 4.7 UNCONSTRAINED SYSTEM NEEDS**

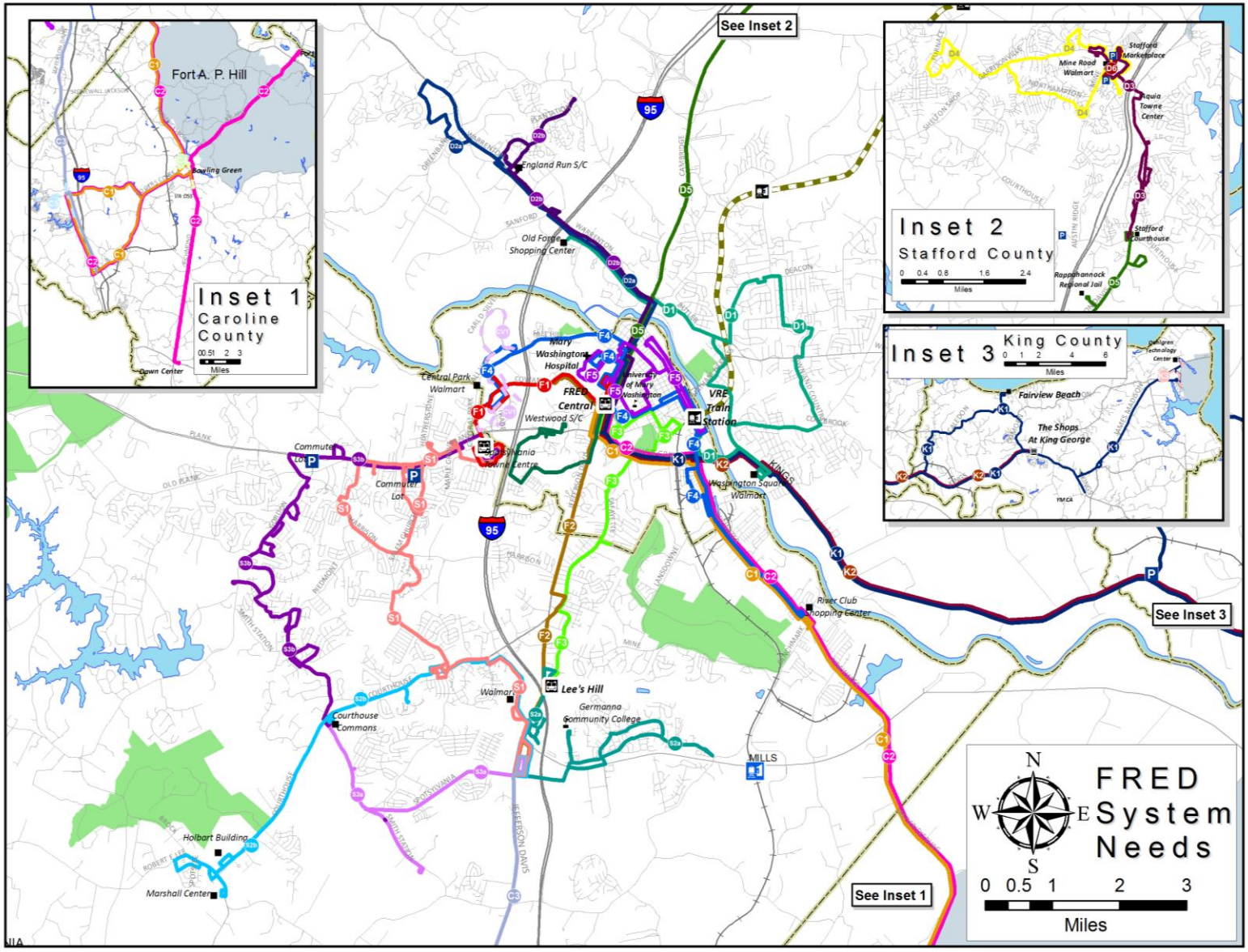
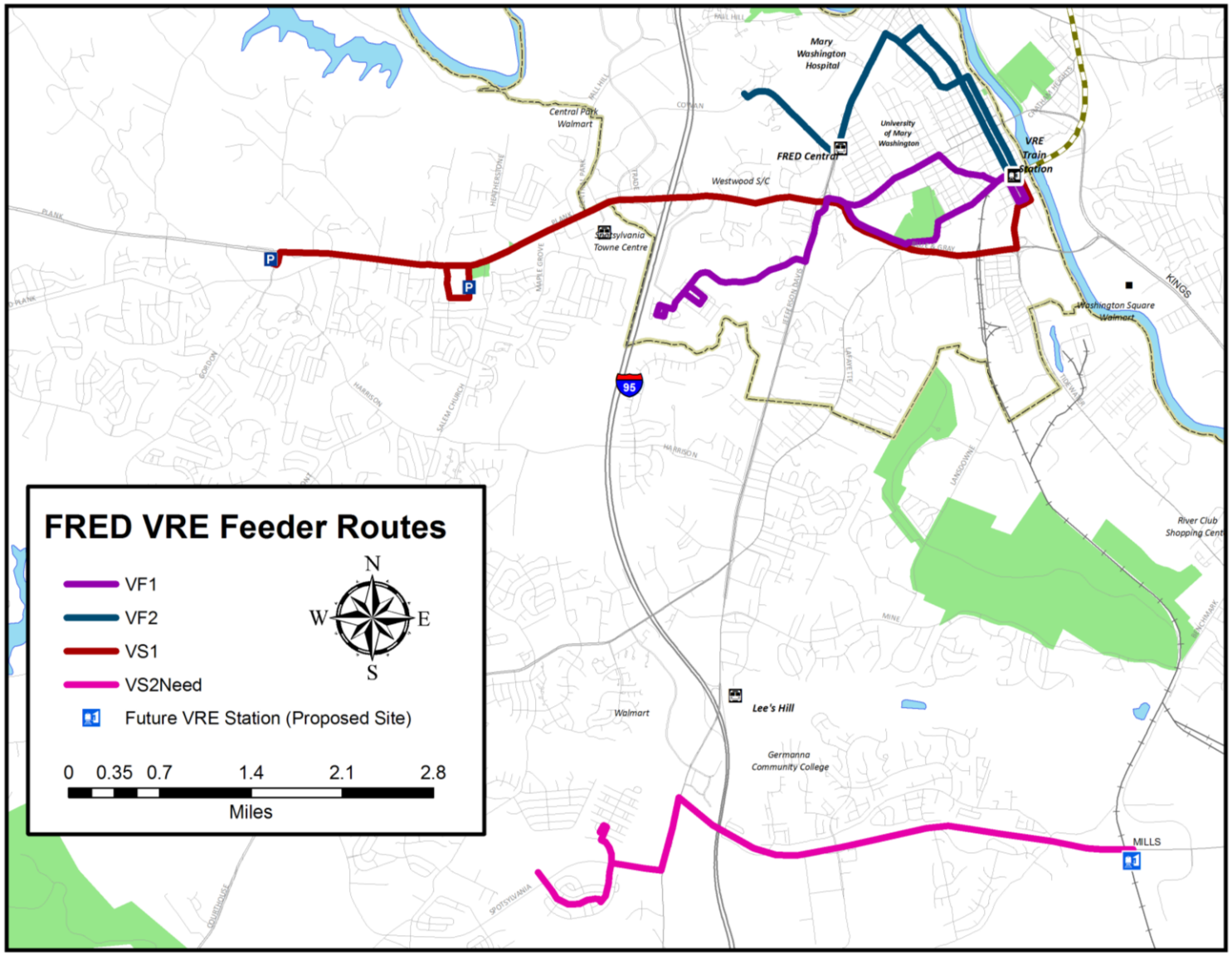


**FIGURE 4.8: VRE FEEDER SERVICE NEEDS**



## 4.2 Facility and Equipment Needs

1. **Vehicle Fleet:** FRED should continue to replace vehicles in its fleet as needed, and purchase new vehicles when new routes are added. Additionally, FRED would benefit from a review of the type of vehicle it operates on the rural less utilized routes in King George and Caroline Counties. The trade-off to be considered in rural areas is between having a single vehicle type that is interchangeable among all routes versus the cost efficiencies of operating smaller vehicles in rural areas.
2. **Maintenance Facility:** FRED is in the process of purchasing its current maintenance facility and should continue to increase maintenance performed in-house as needed.
3. **Transfer Centers:** FRED Central is FRED's only transit center. Although FRED uses several locations throughout the service area as transfer points, many lack shelter and amenities for drivers and patrons. Other than FRED Central, secondary transfer points do not provide secure overnight vehicle storage for FRED buses. Current and proposed transfer facility needs are identified as follows:
    a. **Lee's Hill Center/Cosner's Corner:** Lee's Hill Center is the primary transfer location in Spotsylvania County where several routes converge. The location is on a public roadway cul-de-sac with no shelter, benches or amenities. Nearby restaurants provide the closest shelter and services. No formal agreements are in place to utilize this location as a transfer point. While this location serves as a good transfer location, it lacks dedicated parking areas and can become crowded with other vehicles and trucks. Additionally, much of the commercial development in the area has moved south to Cosner's Corner. Although there is still a need to serve Lee's Hill, FRED patrons would be better served by a transfer location in the vicinity of Cosner's Corner with a transfer location that can provide shelter, benches and amenities for FRED drivers and patrons.
    b. **Stafford Marketplace:** Stafford Marketplace provides a good hub and central location for FRED routes to meet in Northern Stafford. However, the site lacks shelter and benches. FRED should coordinate with the center and Stafford County to develop an official hub at this center and provide shelter for patrons.
    c. **King George County:** The Shops at King George provide a transfer location for the two King George routes; however, the center shops are not accommodating to FRED patrons waiting for the bus. The site lacks shelter, benches and restrooms. Stop amenities or a transit friendly alternate hub may be warranted.
    d. **Caroline County:** The current transfer location at the Caroline County Department of Social Services provides shelter and benches for patrons; however, it does not have a secure storage facility for the FRED fleet, and FRED must drive vehicles from downtown Fredericksburg. A secure location in Caroline County to store FRED vehicles is needed to reduce excess mileage on vehicles.
    e. **Unofficial Transfer Locations:** FRED has many locations where patrons can make untimed transfers to other routes. Wherever possible, FRED should provide shelter and benches in these locations.

4. **Bus Stop Amenities:** During the public outreach process, many patrons expressed the need for benches and shelters at stops throughout the system. FRED should continue to review the need for bus stop amenities and work with jurisdictions to add shelters and benches where needed. Additionally, new bus stops will be needed with the addition of any new service.
5. **Obsolete and Unsafe Bus Stops:** FRED's service area has grown since its creation and some stops may no longer be appropriate. FRED should identify stops in vacant centers and adjust as needed. Additionally, FRED patrons and drivers alike identified some stops as unsafe due to location, road traffic, etc. Often times, FRED routes will go into a community or shopping center to create a safer location; however, there are still stops that need to be addressed, such as the stop on Onville Road in Stafford County across from Aquia Car Care. FRED should review alternate routing and location of stops that may not provide a safe location for patrons to wait for the bus. Additionally, FRED should work with jurisdictions and developers to ensure adequate bus pull off areas are provided to increase safety.
6. **Bus Stop Signage:** FRED will be replacing 500 bus stop signs during the six-year TDP timeframe.
7. **Staffing:** Much of FRED's staff is employed on a part-time basis. FRED has a need to increase some part-time staff members to full-time employees, and to add new positions to accommodate FRED's growth. The following new staff positions are recommended:
    a. A second mechanic for the evening shift;
    b. Customer service representative;
    c. Dispatchers;
    d. Security Officer for FRED Central;
    e. Data Entry Clerk; and
    f. Field Supervisors.
8. **Technology:** FRED would benefit from the use of route planning software to provide clear, concise routing information. Additionally, software upgrades for FRED's GPS system would provide added benefit to FRED patrons and help FRED to manage and monitor system performance.

## 4.3 Funding Requirements

Potential costs were estimated for the service and facility unconstrained needs identified above (in FY2011 dollars). Table 4.1 provides a summary of the unconstrained service needs described in this chapter, followed by estimated operating costs in Tables 4.2 through 4.5. Revenue Vehicle Replacement Schedule and Costs are in Tables 4.6 through 4.7. Capital cost estimates are identified in Table 4.8. Potential funding requirements are based on the following assumptions:

- Operating cost of $55.00 per revenue hour;
- Revenue vehicle costs are assumed at $130,000 in FY2011
- Service/pool vehicles are assumed at $30,000 in FY2011;
- Inflation Rate of 3 percent is applied beginning in FY2012;
- Weekday service is 255 days per year; Saturday service is 52 days per year; Sunday & Holiday service is 52 days per year; and
- FREDExpress service is 33 weeks.

**TABLE 4.1: SUMMARY OF PROPOSED SERVICE IMPROVEMENTS**

| Service Improvement | Jurisdiction | Span & Frequency |
|---|---|---|
| **New Fixed Route Service** | | |
| **Celebrate Virginia Circulator** | City of Fredericksburg | 60-Minute Frequency, Weekdays; 10:00 a.m. - 10:00 p.m.; Saturday 10:00 a.m. -11:00 p.m. and Sunday 10:00 a.m. -7:00 p.m. |
| **F6-Idlewild to FRED Central** | City of Fredericksburg | 60-Minute Frequency, Weekdays, 7:00 a.m. - 9:00 p.m. |
| **C3 - Ladysmith/ Carmel Church to Cosner's Corner** | Caroline County | 120-Minute Frequency, Weekdays, 9:00 a.m. - 5:00 p.m. |
| **C4-Bowling Green Circulator** | Caroline County | 60-Minute Frequency, Weekdays, 9:00 a.m. - 5:00 p.m. |
| **C5 - Lady Smith Circulator** | Caroline County | 60-Minute Frequency, Weekdays, 9:00 a.m. - 5:00 p.m. |
| **C6 – Carmel Church Circulator** | Caroline County | 60-Minute Frequency, Weekdays, 9:00 a.m. - 5:00 p.m. |
| **K3-Dahlgren Circulator** | King George County | 60-Minute Frequency, Weekdays, 9:00 a.m. - 5:00 p.m. |
| **VS2 - Lee Park VRE Feeder** | Spotsylvania County | VRE Feeder Service |
| **Increased Span of Service/Route Modification/Frequency Improvements** | | |
| **F1 - FRED Central to Spotsylvania Towne Centre** | City of Fredericksburg | Increased Frequency, Restructured Route Alignment and Expanded Service Hours |
| **F2 - FRED Central to Lees Hill** | City of Fredericksburg | Restructured Route to Service Cosner's Corner, Expanded Service Hours |
| **F3 - FRED Central to Lees Hill Center** | City of Fredericksburg | Increased Frequency to 30 minutes, Expanded Service Hours |
| **F4 - FRED Central to Central Park/River Club** | City of Fredericksburg | Increased Frequency to 30 minutes, Expanded Service Hours |
| **F5 - The Downtown Loop** | City of Fredericksburg | Increased Frequency to 30 minutes, Expanded Service Hours |
| **S1- Cosner's Corner to Spotsylvania Towne Centre** | Spotsylvania County | Expanded Service Hours, Restructured to serve Cosner's Corner |
| **S2a - Lees Hill Center to Germanna Community College, S2b - Marshall Center to Cosner's Corner** | Spotsylvania County | Split into two routes; restructured to serve Cosner's Corner, Increased Frequency to 60-Minutes, Expanded Service Hours, |
| **S3a - Courtland Commons to Cosner's Corner; S3b - Courtland Commons to Spotsylvania Towne Centre** | Spotsylvania County | Split into two routes; restructured to serve Cosner's Corner and Spotsylvania Towne Centre; Increased frequency to 60-minutes; Expanded Service Hours |
| **D1 - Southern Stafford County** | Stafford County | Increased Service Hours |
| **D2a - FRED Central to Geico; D2b - FRED Central to English Village** | Stafford County | Split Into Two Routes; Expanded to Village Parkway Walmart; Increased Service Hours |
| **D3- Stafford Courthouse; Aquia Towne Center; Stafford Marketplace** | Stafford County | Increased Frequency to 30 minutes, Expanded Service Hours |

| | | |
|---|---|---|
| **D4 - Stafford Marketplace to Porter Library** | Stafford County | Expanded Service Hours |
| **D5- FRED Central to Stafford Courthouse** | Stafford County | Expanded Service Hours; Increased Frequency to 30 Minutes |
| **C1-FRED-Bowling Green-Carmel Church-Ladysmith** | Caroline County | Increased Frequency to 60 Minutes |
| **C2 - FRED Central-CSC/DSS-Dawn Center/Port Royal** | Caroline County | Increased Frequency to 60 Minutes |
| **K1-FRED Central - King George Shopping Center** | King George | Increased Frequency to 60 Minutes |
| **K2 - FRED Central - The Shops at King George** | King George | Increased Frequency to 60 Minutes |
| **Weekend Service** | | |
| **Routes F1, F2, F3, F4, F5** | City of Fredericksburg | Added Saturday and Sunday Service |
| **Routes D2a, D2b, D3, D4, D5** | Stafford County | Added Saturday and Sunday Service |
| **Route S1, S2a** | Spotsylvania County | Added Saturday and Sunday Service |

## TABLE 4.2: WEEKDAY UNCONSTRAINED SERVICE PLAN ESTIMATED OPERATING COSTS

| Rte. # | Route Pattern | Existing Rev. Hrs | Existing Rev. Miles | Existing Daily Buses | Existing Annual Operating Costs | Expanded Rev. Hours | Expanded Rev. Miles | Expanded Daily Buses | Expanded Annual Operating Costs | Total Rev. Hours | Total Rev. Miles | Total Daily Buses | Total Annual Operating Costs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| F1 | FRED Central to Spotsylvania Towne Centre | 2,805 | 35,091 | 1.0 | $154,275 | 4,335 | 38,594 | 1.0 | $238,425 | 7,140 | 73,685 | 2.0 | $392,700 |
| F2 | FRED Central to Cosner's Corner Via J.D.H | 3,315 | 44,454 | 1.0 | $182,325 | 510 | 17,473 | 0.0 | $28,050 | 3,825 | 61,927 | 1.0 | $210,375 |
| F3 | FRED Central to Lees Hill Center Via Lafayette | 3,315 | 47,736 | 1.0 | $182,325 | 4,335 | 62,424 | 1.0 | $238,425 | 7,650 | 110,160 | 2.0 | $420,750 |
| F4 | FRED Central -Central Park | 2,805 | 35,904 | 1.0 | $154,275 | 4,845 | 62,016 | 1.0 | $266,475 | 7,650 | 97,920 | 2.0 | $420,750 |
| | FRED Central - River Club | 3,060 | 37,148 | 1.0 | $168,300 | 4,590 | 55,723 | 1.0 | $252,450 | 7,650 | 92,871 | 2.0 | $420,750 |
| F5 | FRED Central - The Downtown Loop | 3,060 | 30,906 | 1.0 | $168,300 | 4,080 | 41,208 | 1.0 | $224,400 | 7,140 | 72,114 | 2.0 | $392,700 |
| *F6* | *NEW-Idlewilde-Westwood S.C. - Fred Central* | *0* | *0* | *0.0* | *$0* | *3,570* | *26,882* | *1.0* | *$196,350* | *3,570* | *26,882* | *1.0* | *$196,350* |
| *CV1* | *Celebrate Virginia Circulator* | *0* | *0* | *0.0* | *$0* | *3,060* | *46,084* | *1.0* | *$168,300* | *3,060* | *46,084* | *1.0* | *$168,300* |
| S1 | Cosner's Corner - Spotsylvania Towne Centre | 5,100 | 81,881 | 2.0 | $280,500 | 6,120 | 96,069 | 2.0 | $336,600 | 11,220 | 177,949 | 4.0 | $617,100 |
| S2 | Lees Hill Center - Marshall Center | 1,530 | 29,422 | 0.5 | $84,150 | 2,040 | 45,477 | 0.5 | $112,200 | 3,570 | 74,899 | 1.0 | $196,350 |
| | Lees Hill Center - Germanna College | 1,530 | 20,150 | 0.5 | $84,150 | 2,040 | 33,007 | 0.5 | $112,200 | 3,570 | 53,157 | 1.0 | $196,350 |
| S3a | Spots. Towne Centre to Courtland Commons | 3,060 | 47,629 | 1.0 | $168,300 | 3,060 | 37,868 | 1.0 | $168,300 | 6,120 | 85,496 | 2.0 | $336,600 |
| S3b | Courtland Commons to Cosner's Corner | 0 | 0 | 0.0 | $0 | 3,060 | 34,762 | 1.0 | $168,300 | 3,060 | 34,762 | 1.0 | $168,300 |
| D1 | Southern Stafford - Train Station - YMCA | 2,550 | 51,587 | 1.0 | $140,250 | 510 | 10,226 | 0.0 | $28,050 | 3,060 | 61,812 | 1.0 | $168,300 |
| D2a | Southern Stafford - FRED Central - GEICO | 3,060 | 49,694 | 1.0 | $168,300 | 510 | 3,963 | 0.0 | $28,050 | 3,570 | 53,657 | 1.0 | $196,350 |
| D2b | Southern Stafford - FRED Central - English Village | 0 | 0 | 0.0 | $0 | 3,570 | 51,765 | 1.0 | $196,350 | 3,570 | 51,765 | 1.0 | $196,350 |
| D3 | Stafford Courthouse - Aquia Towne Center | 2,805 | 30,939 | 1.0 | $154,275 | 4,335 | 47,815 | 1.0 | $238,425 | 7,140 | 78,754 | 2.0 | $392,700 |
| D4 | Stafford Marketplace - Porter Library | 2,040 | 27,907 | 1.0 | $112,200 | 1,020 | 13,954 | 0.0 | $56,100 | 3,060 | 41,861 | 1.0 | $168,300 |
| D5 | FRED Central to Stafford Courthouse | 3,060 | 66,708 | 1.0 | $168,300 | 4,080 | 88,944 | 1.0 | $224,400 | 7,140 | 155,652 | 2.0 | $392,700 |
| D6 | Stafford County Express - North/South VDOT | 1,020 | 10,200 | 1.0 | $56,100 | 0 | 0 | 0.0 | $0 | 1,020 | 10,200 | 1.0 | $56,100 |
| C1 | FRED-Bowling Green-Carmel Church-Ladysmith | 2,550 | 86,700 | 1.0 | $140,250 | 1,530 | 52,020 | 1.0 | $84,150 | 4,080 | 138,720 | 2.0 | $224,400 |
| C2 | FRED Central-CSC/DSS-Dawn Center/Port Royal | 2,040 | 39,127 | 1.0 | $112,200 | 2,040 | 39,127 | 1.0 | $112,200 | 4,080 | 78,254 | 2.0 | $224,400 |
| *C3* | *Ladysmith, Carmel Church, Cosner's Corner* | *0* | *0* | *0.0* | *$0* | *2,040* | *44,880* | *1.0* | *$112,200* | *2,040* | *44,880* | *1.0* | *$112,200* |
| *C4* | *Caroline County - Bowling Green Circulator* | *0* | *0* | *0.0* | *$0* | *2,040* | *20,400* | *1.0* | *$112,200* | *2,040* | *20,400* | *1.0* | *$112,200* |
| *C5* | *Caroline County - Ladysmith Circulator* | *0* | *0* | *0.0* | *$0* | *2,040* | *24,480* | *1.0* | *$112,200* | *2,040* | *24,480* | *1.0* | *$112,200* |
| *C6* | *Caroline County - Carmel Church Circulator* | *0* | *0* | *0.0* | *$0* | *2,040* | *24,480* | *1.0* | *$112,200* | *2,040* | *24,480* | *1.0* | *$112,200* |
| *K3* | *Dahlgren Circulator* | *0* | *0* | *0.0* | *$0* | *2,040* | *30,600* | *1.0* | *$112,200* | *2,040* | *30,600* | *1.0* | *$112,200* |
| K1 | FRED Central - King George Shopping Center | 3,060 | 91,777 | 1.0 | $168,300 | 2,550 | 76,481 | 1.0 | $140,250 | 5,610 | 168,258 | 2.0 | $308,550 |
| K2 | FRED Central - The Shops at King George | 1,020 | 38,760 | 1.0 | $56,100 | 1,020 | 38,760 | 0.0 | $56,100 | 2,040 | 77,520 | 1.0 | $112,200 |
| VF1 | VRE Feeder-Idlewild-Train Station | 2,295 | 16,218 | 1.0 | $126,225 | 0 | 0 | 0.0 | $0 | 2,295 | 16,218 | 1.0 | $126,225 |
| VF2 | VRE Feeder - Cowan Blvd.-Train Station | 1,530 | 11,322 | 1.0 | $84,150 | 0 | 0 | 0.0 | $0 | 1,530 | 11,322 | 1.0 | $84,150 |
| VS1 | VRE Feeder - Gordon Rd-Ukrops-Train Station | 3,188 | 22,542 | 2.0 | $175,313 | 0 | 0 | 0.0 | $0 | 3,188 | 22,542 | 2.0 | $175,313 |
| *VS2* | *VRE Feeder - Lee Park - Proposed VRE Station* | *0* | *0* | *0.0* | *$0* | *2,486* | *20,553* | *1.0* | *$136,744* | *2,486* | *20,553* | *1.0* | *$136,744* |
| **TOTALS** | | **59,798** | **953,802** | **24.0** | **$3,288,863** | **79,496** | **1,186,032** | **24.0** | **$4,372,294** | **139,294** | **2,139,834** | **48.0** | **$7,661,156** |

FREDExpress Weekday

| Rte. # | Route Pattern | Existing Rev. Hrs | Existing Rev. Miles | Existing Daily Buses | Existing Annual Operating | Expanded Rev. Hours | Expanded Rev. Miles | Expanded Daily Buses | Expanded Annual Operating | Total Rev. Hours | Total Rev. Miles | Total Daily Buses | Total Annual Operating Costs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M2 | UMW/Central Park/Spotsylvania TC | 198 | 1,903 | 0.0 | $10,890 | 0 | 0 | 0.0 | $0 | 198 | 1,903 | 0.0 | $10,890 |
| **Thur/Fri** | | **198** | **1,903** | **0.0** | **$10,890** | **0** | **0** | **0.0** | **$0** | **198** | **1,903** | **0.0** | **$10,890** |
| M3 | UMW/Downtown/Central Park Late Night | 99 | 1,113 | 0.0 | $5,445 | 0 | 0 | 0.0 | $0 | 99 | 1,113 | 0.0 | $5,445 |
| **Fri** | | **99** | **1,113** | **0.0** | **$5,445** | **0** | **0** | **0.0** | **$0** | **99** | **1,113** | **0.0** | **$5,445** |

## TABLE 4.3: SATURDAY UNCONSTRAINED SERVICE PLAN ESTIMATED OPERATING COSTS

| Rte. # | Route Pattern | Existing Rev. Hrs | Existing Rev. Miles | Existing Daily Buses | Existing Annual Operating Costs | Expanded Rev. Hours | Expanded Rev. Miles | Expanded Daily Buses | Expanded Annual Operating Costs | Total Rev. Hours | Total Rev. Miles | Total Daily Buses | Total Annual Operating Costs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| F1 | FRED Central to Spotsylvania Towne Centre | 0 | 0 | 0.0 | $0 | 676 | 6,963 | 1.0 | $37,180 | 676 | 6,963 | 1.00 | $37,180 |
| F2 | FRED Central to Cosner's Corner Via J.D.H | 0 | 0 | 0.0 | $0 | 676 | 10,816 | 1.0 | $37,180 | 676 | 10,816 | 1.00 | $37,180 |
| F3 | FRED Central to Lees Hill Center Via Lafayette | 0 | 0 | 0.0 | $0 | 676 | 9,734 | 1.0 | $37,180 | 676 | 9,734 | 1.00 | $37,180 |
| F4 | FRED Central -Central Park | 0 | 0 | 0.0 | $0 | 676 | 8,653 | 1.0 | $37,180 | 676 | 8,653 | 1.00 | $37,180 |
| | FRED Central - River Club | 0 | 0 | 0.0 | $0 | 676 | 8,207 | 1.0 | $37,180 | 676 | 8,207 | 1.00 | $37,180 |
| F5 | Weekend Downtown Tourist Loop | 0 | 0 | 0.0 | $0 | 676 | 5,814 | 1.0 | $37,180 | 676 | 5,814 | 1.00 | $37,180 |
| CV1 | Celebrate Virginia Circulator | 0 | 0 | 0.0 | $0 | 676 | 10,181 | 1.0 | $37,180 | 676 | 10,181 | 1.00 | $37,180 |
| D2a | Southern Stafford - FRED Central - GEICO | 0 | 0 | 0.0 | $0 | 676 | 10,160 | 1.0 | $37,180 | 676 | 10,160 | 1.00 | $37,180 |
| D2b | Southern Stafford - FRED Central - English Village | 0 | 0 | 0.0 | $0 | 676 | 9,802 | 1.0 | $37,180 | 676 | 9,802 | 1.00 | $37,180 |
| D3 | Stafford Courthouse - Aquia Towne Center | 0 | 0 | 0.0 | $0 | 676 | 7,456 | 1.0 | $37,180 | 676 | 7,456 | 1.00 | $37,180 |
| D4 | Stafford Marketplace - Porter Library | 0 | 0 | 0.0 | $0 | 676 | 9,248 | 1.0 | $37,180 | 676 | 9,248 | 1.00 | $37,180 |
| D5 | FRED Central to Stafford Courthouse | 0 | 0 | 0.0 | $0 | 676 | 14,737 | 1.0 | $37,180 | 676 | 14,737 | 1.00 | $37,180 |
| S1 | Lees Hill Center - Spotsylvania Towne Centre | 0 | 0 | 0.0 | $0 | 676 | 21,443 | 1.0 | $37,180 | 676 | 21,443 | 1.00 | $37,180 |
| S2a | Lees Hill Center - Germanna College | 0 | 0 | 0.0 | $0 | 676 | 10,140 | 1.0 | $37,180 | 676 | 10,140 | 1.00 | $37,180 |
| **FRED TOTALS** | | **0** | **0** | **0.0** | **$0** | **9,464** | **143,353** | **14.0** | **$520,520** | **9,464** | **143,353** | **14.0** | **$520,520** |
| M1 | Downtown/Central Park/Fall Hill/FRED | 429 | 5,217 | 1.0 | $23,595 | 0 | 0 | 0.0 | $0 | 429 | 5,217 | 1.00 | $23,595 |
| M2 | UMW/Central Park/Spotsylvania TC | 429 | 4,123 | 1.0 | $23,595 | 0 | 0 | 0.0 | $0 | 429 | 4,123 | 1.00 | $23,595 |
| M3 | UMW/Downtown/Central Park Late Night | 99 | 1,113 | 0.0 | $5,445 | 0 | 0 | 0.0 | $0 | 99 | 1,113 | 0.00 | $5,445 |
| **FRED Express TOTALS** | | **957** | **10,452** | **2.0** | **$52,635** | **0** | **0** | **0.0** | **$0** | **957** | **10,452** | **2.0** | **$52,635** |
| ***Saturday Total*** | | ***957*** | ***10,452*** | ***2.0*** | ***$52,635*** | ***9,464*** | ***143,353*** | ***14.0*** | ***$520,520*** | ***10,421*** | ***153,805*** | ***16.0*** | ***$573,155*** |

## TABLE 4.4: SUNDAY UNCONSTRAINED SERVICE PLAN ESTIMATED OPERATING COSTS

| Rte. # | Route Pattern | Existing Rev. Hrs | Existing Rev. Miles | Existing Daily Buses | Existing Annual Operating Costs | Expanded Rev. Hours | Expanded Rev. Miles | Expanded Daily Buses | Expanded Annual Operating Costs | Total Rev. Hours | Total Rev. Miles | Total Daily Buses | Total Annual Operating Costs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| F1 | FRED Central to Spotsylvania Towne Centre | 0 | 0 | 0.0 | $0 | 468 | 4,820 | 1.0 | $25,740 | 468 | 4,820 | 1.00 | $25,740 |
| F2 | FRED Central to Cosner's Corner Via J.D.H | 0 | 0 | 0.0 | $0 | 468 | 7,488 | 1.0 | $25,740 | 468 | 7,488 | 1.00 | $25,740 |
| F3 | FRED Central to Lees Hill Center Via Lafayette | 0 | 0 | 0.0 | $0 | 468 | 6,739 | 1.0 | $25,740 | 468 | 6,739 | 1.00 | $25,740 |
| F4 | FRED Central -Central Park | 0 | 0 | 0.0 | $0 | 468 | 5,990 | 1.0 | $25,740 | 468 | 5,990 | 1.00 | $25,740 |
| | FRED Central - River Club | 0 | 0 | 0.0 | $0 | 468 | 5,682 | 1.0 | $25,740 | 468 | 5,682 | 1.00 | $25,740 |
| F5 | Weekend Downtown Tourist Loop | 0 | 0 | 0.0 | $0 | 468 | 4,025 | 1.0 | $25,740 | 468 | 4,025 | 1.00 | $25,740 |
| CV1 | Celebrate Virginia Circulator | 0 | 0 | 0.0 | $0 | 468 | 7,048 | 1.0 | $25,740 | 468 | 7,048 | 1.00 | $25,740 |
| D2a | Southern Stafford - FRED Central - GEICO | 0 | 0 | 0.0 | $0 | 468 | 7,034 | 1.0 | $25,740 | 468 | 7,034 | 1.00 | $25,740 |
| D2b | Southern Stafford - FRED Central - English Village | 0 | 0 | 0.0 | $0 | 468 | 6,786 | 1.0 | $25,740 | 468 | 6,786 | 1.00 | $25,740 |
| D3 | Stafford Courthouse - Aquia Towne Center | 0 | 0 | 0.0 | $0 | 468 | 5,162 | 1.0 | $25,740 | 468 | 5,162 | 1.00 | $25,740 |
| D4 | Stafford Marketplace - Porter Library | 0 | 0 | 0.0 | $0 | 468 | 6,402 | 1.0 | $25,740 | 468 | 6,402 | 1.00 | $25,740 |
| D5 | FRED Central to Stafford Courthouse | 0 | 0 | 0.0 | $0 | 468 | 10,202 | 1.0 | $25,740 | 468 | 10,202 | 1.00 | $25,740 |
| S1 | Lees Hill Center - Spotsylvania Towne Centre | 0 | 0 | 0.0 | $0 | 468 | 14,845 | 1.0 | $25,740 | 468 | 14,845 | 1.00 | $25,740 |
| S2a | Lees Hill Center - Germanna College | 0 | 0 | 0.0 | $0 | 468 | 7,020 | 1.0 | $25,740 | 468 | 7,020 | 1.00 | $25,740 |
| **FRED TOTALS** | | **0** | **0** | **0.0** | **$0** | **6,552** | **99,244** | **14.0** | **$360,360** | **6,552** | **99,244** | **14.0** | **$360,360** |
| M1 | Downtown/Central Park/Fall Hill/FRED | 297 | 3,612 | 1.0 | $16,335 | 0 | 0 | 0.0 | $0 | 297 | 3,612 | 1.00 | $16,335 |
| M2 | UMW/Central Park/Spotsylvania TC | 297 | 2,854 | 1.0 | $16,335 | 0 | 0 | 0.0 | $0 | 297 | 2,854 | 1.00 | $16,335 |
| **FRED Express TOTALS** | | **594** | **6,466** | **2.0** | **$32,670** | **0** | **0** | **0.0** | **$0** | **594** | **6,466** | **2.0** | **$32,670** |
| ***Sunday Total*** | | ***594*** | ***6,466*** | ***2.0*** | ***$32,670*** | ***6,552*** | ***99,244*** | ***14.0*** | ***$360,360*** | ***7,146*** | ***105,710*** | ***16.0*** | ***$393,030*** |

## TABLE 4.5: ANNUAL ESTIMATED TOTAL UNCONSTRAINED OPERATING COSTS BY JURISDICTION

| Jurisdiction | Existing Rev. Hrs | Existing Rev. Miles | Existing Daily Buses | Existing Annual Operating | Expanded Rev. Hours | Expanded Rev. Miles | Expanded Daily Buses | Expanded Annual Operating | Total Rev. Hours | Total Rev. Miles | Total Daily Buses | Total Annual Operating Costs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City of Fredericksburg | 22,185 | 258,779 | 8.0 | $1,220,175 | 37,333 | 452,562 | 7.0 | $2,053,315 | 59,518 | 711,341 | 15.0 | $3,273,490 |
| Spotsylvania County | 14,408 | 201,623 | 6.0 | $792,413 | 21,094 | 321,182 | 6.0 | $1,160,184 | 35,502 | 522,806 | 12.0 | $1,952,596 |
| Stafford County | 14,535 | 237,035 | 6.0 | $799,425 | 19,745 | 303,656 | 3.0 | $1,085,975 | 34,280 | 540,691 | 9.0 | $1,885,400 |
| Caroline County | 4,590 | 125,827 | 2.0 | $252,450 | 11,730 | 205,387 | 6.0 | $645,150 | 16,320 | 331,214 | 8.0 | $897,600 |
| King George County | 4,080 | 130,537 | 2.0 | $224,400 | 5,610 | 145,841 | 2.0 | $308,550 | 9,690 | 276,378 | 4.0 | $532,950 |
| FRED Express | 1,848 | 19,933 | 2.0 | $101,640 | 0 | 0 | 0.0 | $0 | 1,848 | 19,933 | 2.0 | $101,640 |
| ***Annual Total*** | ***61,646*** | ***973,735*** | ***24.0*** | ***$3,390,503*** | ***95,512*** | ***1,428,628*** | ***24.0*** | ***$5,253,174*** | ***157,158*** | ***2,402,364*** | ***48.0*** | ***$8,643,676*** |

## TABLE 4.6: EXISTING REVENUE VEHICLE REPLACEMENT SCHEDULE

| FRED Vehicle # | Date Delivered | Use | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|
| ***Existing Vehicles*** | | | ***Vehicle Age - Replacement Year (R)*** | | | | | |
| 716 | 1997 | Regular service | **R** | | | | | |
| 730 | 2004 | Regular service | **R** | | | | | |
| 731 | 2004 | Regular service | **R** | | | | | |
| 732 | 2004 | Regular service | **R** | | | | | |
| 735 | 2004 | Regular service | **R** | | | | | |
| 728 | 2004 | Regular service | 7 | **R** | | | | |
| 733 | 2004 | Regular service | 7 | **R** | | | | |
| 734 | 2004 | Regular service | 5 | **R** | | | | |
| 736 | 2006 | Regular service | 5 | **R** | | | | |
| 737 | 2006 | Regular service | 5 | **R** | | | | |
| 738 | 2006 | Regular service | 5 | **R** | | | | |
| 739 | 2006 | Regular service | 5 | **R** | | | | |
| 729 | 2004 | Regular service | 7 | 8 | **R** | | | |
| 740 | 2007 | Regular service | 4 | 5 | **R** | | | |
| 741 | 2007 | Regular service | 4 | 5 | **R** | | | |
| 742 | 2007 | Regular service | 4 | 5 | **R** | | | |
| 743 | 2007 | Regular service | 4 | 5 | **R** | | | |
| 744 | 2007 | Regular service | 4 | 5 | **R** | | | |
| 745 | 2007 | Regular service | 4 | 5 | **R** | | | |
| 746 | 2007 | Regular service | 4 | 5 | **R** | | | |
| 747 | 2007 | Regular service | 4 | 5 | **R** | | | |
| 748 | 2007 | Regular service | 4 | 5 | 6 | **R** | | |
| 749 | 2007 | Regular service | 4 | 5 | 6 | **R** | | |
| 750 | 2010 | Regular service | 1 | 2 | 3 | 4 | 5 | 6 |
| 751 | 2010 | Regular service | 1 | 2 | 3 | 4 | 5 | 6 |
| 752 | 2010 | Regular service | 1 | 2 | 3 | 4 | 5 | 6 |
| 753 | 2010 | Regular service | 1 | 2 | 3 | 4 | 5 | 6 |
| 754 | 2010 | Regular service | 1 | 2 | 3 | 4 | 5 | 6 |
| 755 | 2010 | Regular service | 1 | 2 | 3 | 4 | 5 | 6 |
| 756 | 2010 | Regular service | 1 | 2 | 3 | 4 | 5 | 6 |
| 757 | 2010 | Regular service | 1 | 2 | 3 | 4 | 5 | 6 |
| ***New Vehicles*** | | | | | | | | |
| n/a | 2011 | Regular service | 0 | 1 | 2 | 3 | 4 | 5 |
| n/a | 2011 | Regular service | 0 | 1 | 2 | 3 | 4 | 5 |
| n/a | 2011 | Regular service | 0 | 1 | 2 | 3 | 4 | 5 |
| n/a | 2011 | Regular service | 0 | 1 | 2 | 3 | 4 | 5 |
| n/a | 2011 | Regular service | 0 | 1 | 2 | 3 | 4 | 5 |
| n/a | 2012 | Regular service | | 0 | 1 | 2 | 3 | 4 |
| n/a | 2012 | Regular service | | 0 | 1 | 2 | 3 | 4 |
| n/a | 2012 | Regular service | | 0 | 1 | 2 | 3 | 4 |
| n/a | 2012 | Regular service | | 0 | 1 | 2 | 3 | 4 |
| n/a | 2012 | Regular service | | 0 | 1 | 2 | 3 | 4 |
| n/a | 2012 | Regular service | | 0 | 1 | 2 | 3 | 4 |
| n/a | 2012 | Regular service | | 0 | 1 | 2 | 3 | 4 |
| n/a | 2013 | Regular service | | | 0 | 1 | 2 | 3 |
| n/a | 2013 | Regular service | | | 0 | 1 | 2 | 3 |
| n/a | 2013 | Regular service | | | 0 | 1 | 2 | 3 |
| n/a | 2013 | Regular service | | | 0 | 1 | 2 | 3 |
| n/a | 2013 | Regular service | | | 0 | 1 | 2 | 3 |
| n/a | 2013 | Regular service | | | 0 | 1 | 2 | 3 |
| n/a | 2013 | Regular service | | | 0 | 1 | 2 | 3 |
| n/a | 2013 | Regular service | | | 0 | 1 | 2 | 3 |
| n/a | 2013 | Regular service | | | 0 | 1 | 2 | 3 |
| n/a | 2014 | Regular service | | | | 0 | 1 | 2 |
| n/a | 2014 | Regular service | | | | 0 | 1 | 2 |
| **Total Vehicles** | | | **31** | **31** | **31** | **31** | **31** | **31** |
| **Average Vehicle Age** | | | **3.0** | **2.5** | **1.7** | **2.3** | **3.3** | **4.3** |
| **Vehicles Replaced** | | | **5** | **7** | **9** | **2** | | |
| **Total Vehicle Cost** | | | **$650,000** | **$937,300** | **$1,241,253** | **$284,109** | **$0** | **$0** |

**TABLE 4.7: ESTIMATED UNCONSTRAINED COSTS FOR REPLACEMENT/EXPANSION VEHICLES**

| Service Vehicle Needs | Peak Vehicles | Fleet Vehicles | Vehicle Type | Unit Cost | Total Cost |
|---|---|---|---|---|---|
| Replacement Revenue Vehicles | | 23 | Body on Chassis | $130,000 | $3,112,662 |
| Service Expansion Vehicles | 24 | 27 | Body on Chassis | $130,000 | $3,510,000 |
| Pool/Service Replacement Vehicles | | 4 | | $30,000 | $133,238 |
| **Total** | | **57** | | | **$7,055,900** |

**Replacement Vehicles use a factor of .03 for inflation beginning FY2012; Expansion vehicles do not factor inflation.*

**TABLE 4.8: OTHER UNCONSTRAINED CAPITAL NEEDS**

| Other Capital Needs | Estimated Cost |
|---|---|
| **Transfer Location Needs** Addition of Shelters, Benches and other Amenities to Primary Transfer Points throughout the service area | |
| a. Cosner's Corner/Lee's Hill Center | $15,000 |
| b. Stafford Marketplace | $15,000 |
| c. Shops at King George | $15,000 |
| **Bus Stop Needs** | |
| a. Benches (50 @ $1,000 Each) | $50,000 |
| b. Shelters (50 @ 10,000 Each) | $500,000 |
| c. Signage (100 new stops @ $157)<br>d. Signage (500 replacements @ $157) | $15,700<br>$78,500 |
| e. Rte. 3 Improved Stops (@ 12,000 Each) | $150,000 |
| **Staffing Needs** Addition of new staff and converting part-time staff to full-time employees | |
| a. Mechanic | $44,419 |
| b. Customer Service Rep. | $44,419 |
| c. Dispatcher | $33,492 |
| d. Security Officer | $20,442 |
| e. Data Entry Clerk | $20,442 |
| f. Janitorial Staff | $20,194 |
| g. Field Supervisors | $20,194 |
| h. Increase Part-Time to Full-Time | Varies |
| **Technology Needs** | |
| a. Route Planning Software | $100,000 |
| b. GPS Software Upgrades | $100,000 |
| c. Automated Farebox, Enunciators, etc. | $100,000 |

# 5.0 Service and Facility Recommendations

This chapter identifies service and facility needs that are recommended for inclusion in the six-year TDP time period (FY2011 through FY2016). Potential service and facility needs were previously identified in Chapter 4 of this TDP. Recommended service and facility improvements that are presented in this chapter are based on anticipated available funding during the TDP time period.

## 5.1 Service Recommendations

Chapter 4 of this TDP identified the following potential service improvements for consideration over the TDP's six-year time period.

1. Increased Service Frequency for Routes F1, F3, F4, F5, S1, S2, S3, D3, D5, C1, C2, K1, and K2;
2. Increased Weekday Span of Service for Routes F1, F2, F3, F4, F5, D1, D2, D3, D4, D5, S1, S2, and S3;
3. Weekend Service on Routes F1, F2, F3 , F4, F5, D2, D3, D4, D5 and S1, S2a;
4. Specific Route Recommendations:
    a. New Celebrate Virginia Circulator;
    b. New Route F6 service to Idlewild Community;
    c. Extended coverage for Spotsylvania Towne Centre by Routes F1 and S1;
    d. Extended service to Cosner's Corner on Route F2 and S1;
    e. Restructured Route S2 into two Routes S2a and S2b;
    f. Restructured Route S3 into two Routes S3a and S3b;
    g. New Feeder Service to the proposed Spotsylvania VRE Station;
    h. Restructured Route D2 into two Routes D2a and D2b;
    i. New community circulators in Bowling Green, Ladysmith and Carmel Church;
    j. New service between Carmel Church, Ladysmith and Cosner's Corner; and
    k. New community circulator and commuter service in Dahlgren.

Over the past six years, FRED has more than doubled its service hours and expanded its service area from a City of Fredericksburg system to a regional system. The Fredericksburg region is a growing region, and FRED anticipates the demand for transit service will warrant further expansion over the TDP timeframe. Projected revenue sources for FY2011 FRED operations are as follows:

<u>Operating Revenues</u>

- Farebox and Other Funds (Urbanized Area): $262,000
- Farebox and Other Funds (Rural Area): $14,000
- Greyhound: $70,000
- Vending: $3,000

<u>Federal</u>

- FTA Section 5307 Funds: $997,454

- FTA Section 5311 Funds: $249,459
- CMAQ Program: $271,796

State

- $425,097 State Operating Assistance (Urbanized Area)
- $77,312 State Operating Assistance (Rural Area)

Local

- Partner Contributions: $114,500
- Local General Funds (Urbanized Area): $1,367,135
- Local General Funds (Rural Area): $135,079

The TDP proposes service expansion throughout the six-year timeframe to accommodate the demands of the growing region. Where federal and state funding levels may be insufficient to cover the expansion, local assistance and farebox revenues are identified to absorb the difference. The results of the 2010 US Census may or may not have a direct effect on federal operating funds for FRED's urbanized service area. This TDP assumes federal operating assistance remains intact; however, another scenario based on FRED not being able to use federal funds for operations is also provided. This second scenario does not change the service plan; rather, it presents a larger local share required to operate the proposed service changes. Following are recommended service improvements for inclusion in the TDP's six-year time period.

***FY2011***

No service changes are proposed in FY2011.

***FY2012***

Several routes in the FRED system are identified for frequency improvements to accommodate the needs of the growing region. The following identifies routes with service frequency improvements in FY2012.

**City of Fredericksburg:** Routes F1, F3, F4, and F5 are modified to provide 30-minute headways as well as increased span of service hours in FY2012:

- **Route F1:** 7:30 a.m. – 9:30 p.m.
- **Route F3:** 6:20 a.m. – 9:30 p.m.
- **Route F4:** 6:30 a.m. – 9:30 p.m.
- **Route F5:** 7:30 a.m. – 9:30 p.m.

**Stafford County:** Headways on Routes D3 and D5 are increased to 30 minutes with span of service hours expanded from 6:30 a.m. to 8:30 p.m. on Route D3 and 6:00 a.m. to 8:00 p.m. on Route D5.

**Spotsylvania County:** The Spotsylvania Routes S2 and S3 have 120-minute headways and long travel times. This TDP suggests splitting these routes and increasing the headways to 60 minutes.

- **Route S1:** Route S1 is modified to provide 30-minute service frequencies. In addition, the route is modified to travel along Southpoint Parkway to Cosner's Corner, where a connection to Route S2a provides access to Lee's Hill Center. The recent opening of The Village at Towne Centre behind Spotsylvania Towne Centre presents additional need to provide service to the back side of the mall in addition to the existing stop. Route S1 would be modified to serve both locations in FY2012.
- **Route S2a**: Route S2a would provide hourly service between Lees Hill Center and Germanna College from 7:00 a.m. until 9:00 p.m. Service would operate with 60-minute headways from 7:00 a.m. until 9:00 p.m.
- **Route S2b**: Route S2b would provide service between the Spotsylvania Courthouse area and Cosner's Corner. Service would operate from 7:00 a.m. until 9:00 p.m. with 60-minute headways. Route S2b would be modified to provide service in the courthouse area along the existing alignment as well as to the new DSS location in Courthouse Village. From the Marshall Center the route would travel along Courthouse Road to Courthouse Commons, Breezewood Shopping Center and Ballantraye Road. The route would travel south on Southpoint Parkway to the Walmart, and would continue to Cosner's Corner. If time permits, this route may also continue to Spotsylvania Regional Medical Center prior to reaching the end of the line. Passengers will be able to make untimed connections to the S2a to continue to Germanna Community College or Lee's Hill at Cosner's Corner.
- **Route S3**: Route S3 is split into two routes, with S3a (FY2013) providing hourly service from Courthouse Commons to the YMCA on Smith Station Road and would continue on Spotsylvania Parkway to Cosner's Corner. Route S3b will provide hourly service from Courthouse Commons along the existing alignment to Harrison Crossing Shopping Center, and would continue east on Plank Road (Rt. 3) with nonstop service to Spotsylvania Towne Centre, where connections to Route S1 (to Plank Road) and Route F1 (to FRED Central) can be made. Route S3b would operate from 7:30 a.m. until 8:30 p.m.

**Route F2**: Demand for connections to Cosner's Corner creates an opportunity to build ridership on the Route F2, while taking a step toward building a regional route along Route 1 (Jefferson Davis Hwy) between FRED Central and Cosner's Corner. Route F2 would be modified to continue on Jefferson Davis to Cosner's Corner, with a stop on Lafayette Boulevard to allow passengers to make an untimed transfer to Route F3 for service to Lee's Hill Center. Additionally, passengers could continue to Cosner's Corner for a connection to S2a to access Lee's Hill. This route would operate with existing service hours at 60-minute headways.

***FY2013***

Many FRED routes would benefit with earlier or later service to accommodate demand for transit users to access work. In addition to the increased service hours identified in FY2012, the following service hour expansions are identified in FY2013:

- Route F2: 6:30 a.m. – 9:30 p.m.
- Route D1: 8:00 a.m. – 8:00 p.m.
- Route D2: 7:00 a.m. – 9:00 p.m.
- Route D4: 7:50 a.m. – 8:30 p.m.

In addition to expanded service hours; Route D2 is split into two routes in FY2013. D2a is extended to serve the Walmart on Village Parkway and the UMW Graduate Campus and travels along Warrenton Road and Jefferson Davis Highway to FRED Central with 60-minute service frequencies. Route D2b travels from the existing alignment in the England Run community and continues along Warrenton Road and Jefferson Davis Highway to FRED Central with 60-minute headways. The combined frequency of the two routes from England Run Shopping Center to FRED Central will be 30 minutes.

Two new routes introduced in FY2013 are as follows:

- **Celebrate Virginia Circulator**: With the completion of the Kalahari Resort, a circulator service in Central Park is proposed to operate between the hotels, resort, attractions and shopping. Although a connection to downtown historic attractions may also be of demand, the initial route proposed only serves Central Park. The circulator service would operate from 10:00 a.m. to 10:00 p.m. on Weekdays, 10:00 a.m. to 11:00 p.m. on Saturday and 10:00 a.m. to 7:00 p.m. on Sunday with 30-minute service frequencies.
- **VRE Feeder Service:** With the completion of the Spotsylvania VRE Station, feeder service from residential areas on Spotsylvania Parkway to the station will be implemented in FY2013. Service will be provided consistent with the train schedule put in place at the time of opening.

Weekend service to Route F1 and F4 is proposed to begin in FY2013 with hourly service between the hours of 8:30 a.m. and 9:30 p.m. on Saturday and from 9:30 a.m. to 6:30 a.m. on Sunday. In addition to weekend service, Route F1 is modified in conjunction with the new Celebrate Virginia Circulator to serve fewer stops in Central Park, and travel to the Village at Spotsylvania Towne Centre, thus serving more stops around the Mall. As weekend service is initiated, the existing FREDExpress service would be reviewed.

In FY2013, the split segment of Route S3 (S3a) is implemented. This route will provide hourly service between Courthouse Commons, the Smith Station YMCA and Cosner's Corner from 7:30 a.m. to 8:30 p.m.

***FY2014***

In FY2014, weekend service is started on Routes F2, F3, F5, D2 and D4 in Stafford and S1 in Spotsylvania. Proposed service hours would be from 8:30 a.m. to 9:30 p.m. on Saturday and 9:30 a.m. to 6:30 a.m. on Sunday.

**New Route F6:** In addition to weekend service, a new Route F6 is introduced in FY2014 with service from FRED Central south along Jefferson Davis Highway to the community of Idlewild, Altoona Road and Westwood Shopping Center. Service would be from 7:00 a.m. until 9:00 p.m. with 60-minute headways.

The segment of Route F1 that currently serves Altoona Road and Westwood Shopping Center is eliminated and is served by the new Route F6.

***FY2015***

In FY2015 new circulator service and expanded frequencies are introduced in Caroline and King George Counties:

- **C3**: Cosner's Corner Connector will provide connector service between Carmel Church, Ladysmith and Cosner's Corner on Monday through Friday between 9:00 a.m. until 5:00 p.m. with service headways of 120 minutes.
- **C4**: The Bowling Green Circulator is hourly service proposed for the town of Bowling Green on Monday through Friday from 9:00 a.m. until 5:00 p.m.
- **C5**: The Ladysmith Circulator is hourly service in the town of Ladysmith from 9:00 a.m. until 5:00 p.m. on Monday through Friday.
- **K3**: The Dahlgren Circulator provides supplemental circulator service in Dahlgren with hourly service from 9:00 a.m. until 5:00 p.m. on Monday through Friday.
- Service frequencies in King George on Routes K1 and K2 are increased to 60-minute headways.
- Service frequencies in Caroline County on Routes C1 and C2 are increased to 60-minute headways.

Weekend service is also proposed to begin in FY2015 for Routes D3, D5 and S2a with hourly service from 8:30 a.m. to 9:30 p.m. on Saturday and 9:30 a.m. to 6:30 p.m. on Sunday.

***FY2016***

No service changes are proposed in FY2016.

Estimates of service requirements for each year of the TDP are noted below in Table 5.1. Table 5.2 shows the service expansion projects implemented each year. Proposed improvements in this service plan reflect a 152 percent increase over FRED's existing annual service-hours. Weekday, Saturday and Sunday service plan tables for each year of the TDP are provided in Appendix F.

**TABLE 5.1: ANNUAL FRED SERVICE REQUIREMENTS**

| Service Statistic | FY2011 | FY2012 | FY2013 | FY2014 | FY2015 | FY 2016 |
|---|---|---|---|---|---|---|
| Weekday Base Buses | 22.0 | 33.0 | 37.0 | 38.0 | 45.0 | 45.0 |
| Saturday Base Buses | 2.0 | 2.0 | 4.0 | 10.0 | 13.0 | 13.0 |
| Sunday Base Buses | 2.0 | 2.0 | 4.0 | 10.0 | 13.0 | 13.0 |
| Annual Rev. Bus Hours | 61,646 | 105,506 | 124,808 | 136,386 | 155,118 | 155,118 |

Other service improvements that were identified in Chapter 4 of this TDP, but not recommended for inclusion in the six-year TDP are: Carmel Church Community Circulator, Caroline County VRE Feeder Service, Plank Road (Route 3) service improvements, Paratransit versus Route Deviation, Flex Routes, Kalahari Downtown Connection, and Rural Fleet versus Urban Fleet. Although these improvements were identified as potential service expansion needs, they were not deemed to be as critical with the greatest demand for this service anticipated to occur beyond the six year planning horizon. If funds are

available, these improvements can be moved forward into the six-year TDP time period. Similarly, funding constraints could result in the need to shift some service improvements that have been identified for the six-year TDP to later years.

**TABLE 5.2: PROPOSED SERVICE EXPANSIONS BY YEAR OF IMPLEMENTATION**

| FY 2011 | Jurisdiction | Route | Existing Rev. Hrs. | Expanded Rev. Hrs. | Add'tl Vehicles | Total Rev. Hrs. | Additional O&M Cost |
|---|---|---|---|---|---|---|---|
| | None | | | | | 61,646 | |
| **FY 2012** | **Jurisdiction** | Route | Existing Rev. Hrs. | Expanded Rev. Hrs. | **Add'tl Vehicles** | Total Rev. Hrs. | Additional Cost |
| Split | Spotsylvania | S2a | 1,530 | 2,040 | 0.5 | 3,570 | $112,200 |
| Split | Spotsylvania | S2b | 1,530 | 2,040 | 0.5 | 3,570 | $112,200 |
| Split | Spotsylvania | S3b | 3,060 | 3,060 | 1.0 | 6,120 | $168,300 |
| Revised | Fredericksburg | F2 | 3,315 | 0 | 0.0 | 3,315 | $0 |
| Frequency | Fredericksburg | F1 | 2,805 | 4,335 | 1.0 | 7,140 | $245,578 |
| Frequency | Fredericksburg | F3 | 3,315 | 4,335 | 1.0 | 7,650 | $245,578 |
| Frequency | Fredericksburg | F4 | 2,805 | 4,845 | 1.0 | 7,650 | $274,469 |
| Frequency | Fredericksburg | | 3,060 | 4,590 | 1.0 | 7,650 | $260,024 |
| Frequency | Fredericksburg | F5 | 3,060 | 4,080 | 1.0 | 7,140 | $231,132 |
| Frequency | Spotsylvania | S1 | 5,100 | 6,120 | 2.0 | 11,220 | $346,698 |
| Frequency | Stafford | D3 | 2,805 | 4,335 | 1.0 | 7,140 | $245,578 |
| Frequency | Stafford | D5 | 3,060 | 4,080 | 1.0 | 7,140 | $231,132 |
| Total | | | 35,445 | 43,860 | 11.0 | 105,506 | $2,484,669 |
| **FY 2013** | **Jurisdiction** | Route | Existing Rev. Hrs. | Expanded Rev. Hrs. | **Add'tl Vehicles** | Total Rev. Hrs. | Additional Cost |
| Span of Service | Fredericksburg | F2 | 3,315 | 510 | 0.0 | 3,825 | $29,758 |
| Span of Service | Stafford | D1 | 2,550 | 510 | 0.0 | 3,060 | $29,758 |
| Split | Stafford | D2a | 3,060 | 510 | 0.0 | 3,570 | $29,758 |
| Split | Stafford | D2b | 0 | 3,570 | 1.0 | 3,570 | $208,308 |
| Span of Service | Stafford | D4 | 2,040 | 1,020 | 0.0 | 3,060 | $59,516 |
| Split New Rt | Spotsylvania | S3a | 0 | 3,060 | 1.0 | 3,060 | $178,549 |
| New Rt | Fredericksburg | CV1 | 0 | 4,204 | 1.0 | 4,204 | $245,301 |
| New Rt | Spotsylvania | VS2 | 0 | 2,486 | 1.0 | 2,486 | $145,057 |
| Weekend Service | Fredericksburg | F1 | 0 | 1,144 | 0.0 | 1,144 | $66,752 |
| Weekend Service | Fredericksburg | F4 | 0 | 2,288 | 0.0 | 2,288 | $133,504 |
| Total | | | 10,965 | 19,302 | 4.0 | 124,808 | $1,126,262 |
| **FY 2014** | **Jurisdiction** | Route | Existing Rev. Hrs. | Expanded Rev. Hrs. | **Add'tl Vehicles** | Total Rev. Hrs. | Additional Cost |
| Revised | Fredericksburg | F1 | 0 | 0 | 0.0 | 0 | $0 |
| New Rt | Fredericksburg | F6 | 0 | 3,570 | 1.0 | 3,570 | $214,557 |
| Weekend Service | Fredericksburg | F2 | 0 | 1,144 | 0.0 | 1,144 | $68,754 |
| Weekend Service | Fredericksburg | F3 | 0 | 1,144 | 0.0 | 1,144 | $68,754 |
| Weekend Service | Fredericksburg | F5 | 0 | 1,144 | 0.0 | 1,144 | $68,754 |
| Weekend Service | Stafford | D2a/b | 0 | 2,288 | 0.0 | 2,288 | $137,509 |
| Weekend Service | Stafford | D4 | 0 | 1,144 | 0.0 | 1,144 | $68,754 |
| Weekend Service | Spotsylvania | S1 | 0 | 1,144 | 0.0 | 1,144 | $68,754 |
| Total | | | 0 | 11,578 | 1.0 | 136,386 | $695,838 |
| **FY 2015** | **Jurisdiction** | Route | Existing Rev. Hrs. | Expanded Rev. Hrs. | **Add'tl Vehicles** | Total Rev. Hrs. | Additional Cost |
| Frequency | Caroline | C1 | 2,550 | 1,530 | 1.0 | 4,080 | $94,712 |
| Frequency | Caroline | C2 | 2,040 | 2,040 | 1.0 | 4,080 | $126,282 |
| Frequency | King George | K1 | 3,060 | 2,550 | 1.0 | 5,610 | $157,853 |
| Frequency | King George | K2 | 1,020 | 1,020 | 0.0 | 2,040 | $63,141 |
| New Rt | Caroline | C3 | 0 | 2,040 | 1.0 | 2,040 | $126,282 |
| New Rt | Caroline | C4 | 0 | 2,040 | 1.0 | 2,040 | $126,282 |
| New Rt | Caroline | C5 | 0 | 2,040 | 1.0 | 2,040 | $126,282 |
| New Rt | King George | K3 | 0 | 2,040 | 1.0 | 2,040 | $126,282 |
| Weekend Service | Stafford | D3 | 0 | 1,144 | 0.0 | 1,144 | $70,817 |
| Weekend Service | Stafford | D5 | 0 | 1,144 | 0.0 | 1,144 | $70,817 |
| Weekend Service | Spotsylvania | S2a | 0 | 1,144 | 0.0 | 1,144 | $70,817 |
| Total | | | 8,670 | 18,732 | 7.0 | 155,118 | $1,159,567 |
| **FY 2016** | **Jurisdiction** | Route | Existing Rev. Hrs. | Expanded Rev. Hrs. | **Add'tl Vehicles** | Total Rev. Hrs. | Additional Cost |
| | None | | | | | | |
| Total | | | 0 | 0 | 0 | 155,118 | 0 |

## 5.2 Vehicle and Facility Recommendations

This TDP has also identified the following vehicle and facility improvements for consideration over the six-year time period, in addition a planned replacement of 500 bus stop signs between FY2012 and FY2016.

***FY2011***

- Five replacement vehicles are proposed for FY2011.

***FY2012***

- Seven replacement vehicles and eleven expansion vehicles are proposed for FY2012.
- One service/pool vehicle is scheduled for replacement in FY2012.
- Twenty benches and 20 shelters are proposed for FY2012 to include five on City of Fredericksburg routes where needed, the proposed transfer location between Routes F2 and F3 on Lafayette; Lee's Hill Center; Spotsylvania Towne Centre; Cosner's Corner; Spotsylvania Hospital; Spotsylvania Courthouse Village; the Walmart on Southpoint Parkway; and four in Stafford County at Stafford Market Place and as needed throughout the service area.

***FY2013***

- Nine replacement vehicles and four expansion vehicles are proposed for FY2013.
- 12 benches and 12 shelters are proposed for FY2013 to accommodate two new routes and to fill in where needed throughout the service area.

***FY2014***

- Two replacement vehicles and one expansion vehicle are proposed for FY2014.
- One service/pool vehicle is scheduled for replacement in FY2014.
- Three shelters and three benches are proposed for FY2014 to accommodate the new Route F6.

***FY2015***

- Seven expansion vehicles are proposed for FY2015.
- 10 shelters and 10 benches are proposed for FY2015 for the Shoppes at King George and other stops throughout Caroline County and King George County.

***FY2016***

- Two service/pool vehicles are scheduled for replacement in FY2016.

# 6.0 CAPITAL IMPROVEMENT PROGRAM

This chapter of the TDP describes capital programs required to carry out the operations and services set forth in the TDP service and facility recommendations that were presented in the prior chapter.

## 6.1 REVENUE VEHICLE REPLACEMENT PROGRAM

FRED has 23 vehicles scheduled to be replaced during the timeframe of the TDP. Additionally, this TDP recommends significant service expansion that will require an additional 23 vehicles. FRED has traditionally used federal funding sources (80%), state (10%) and local (10%) for new vehicles, and thus, the same is assumed for this TDP. If federal and state funding becomes unavailable for vehicle replacement, local contributions are assumed to absorb the balance.

The proposed fleet replacement plan is presented in Table 6.1. With the current replacement plan, the average bus fleet age in FY2011 is 3.0 years with the addition of several new vehicles and declines to 1.7 years in 2014 and increase to 4.3 years in FY2016.

## 6.2 NON-REVENUE VEHICLE REPLACEMENT PROGRAM

FRED has four service/pool vehicles scheduled for replacement during the six-year time frame of the TDP. These are assumed to use federal and state funding sources as well, with 80 percent federal, 10 percent state and 10 percent local contributions. The proposed non-revenue vehicle replacement program is provided in Table 6.2.

## 6.3 VEHICLE EXPANSION PROGRAM

FRED has 23 expansion vehicles needed during the six-year time frame of the TDP. These are assumed to use federal and state funding sources as well, with 80 percent federal, 10 percent state and 10 percent local contributions. With the existing fleet, FRED's spare ratio by 2016 will be 17 percent. The proposed vehicle expansion program is provided in Table 6.3.

## 6.4 FACILITY IMPROVEMENT PROGRAM

This TDP identifies three locations where transfer centers with better transit infrastructure, shelter, and amenities are needed: Lee's Hill/Cosner's Corner; Stafford Marketplace, and the Shoppes at King George. This TDP recommends installing shelters and benches at these locations; however, no major capital investment is proposed during the TDP time frame. Much of the cost to install these facilities is assumed to be offset by local funds. Other bus stops and shelters scheduled for replacement during the time frame of this TDP are provided in Table 6.4.

## TABLE 6.1: REVENUE VEHICLE REPLACEMENT SCHEDULE

| FRED Vehicle # | Date Delivered | Use | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|
| ***Existing Vehicles*** | | | | ***Vehicle Age - Replacement Year (R)*** | | | | |
| 716 | 1997 | Regular service | **R** | | | | | |
| 730 | 2004 | Regular service | **R** | | | | | |
| 731 | 2004 | Regular service | **R** | | | | | |
| 732 | 2004 | Regular service | **R** | | | | | |
| 735 | 2004 | Regular service | **R** | | | | | |
| 728 | 2004 | Regular service | 7 | **R** | | | | |
| 733 | 2004 | Regular service | 7 | **R** | | | | |
| 734 | 2004 | Regular service | 5 | **R** | | | | |
| 736 | 2006 | Regular service | 5 | **R** | | | | |
| 737 | 2006 | Regular service | 5 | **R** | | | | |
| 738 | 2006 | Regular service | 5 | **R** | | | | |
| 739 | 2006 | Regular service | 5 | **R** | | | | |
| 729 | 2004 | Regular service | 7 | 8 | **R** | | | |
| 740 | 2007 | Regular service | 4 | 5 | **R** | | | |
| 741 | 2007 | Regular service | 4 | 5 | **R** | | | |
| 742 | 2007 | Regular service | 4 | 5 | **R** | | | |
| 743 | 2007 | Regular service | 4 | 5 | **R** | | | |
| 744 | 2007 | Regular service | 4 | 5 | **R** | | | |
| 745 | 2007 | Regular service | 4 | 5 | **R** | | | |
| 746 | 2007 | Regular service | 4 | 5 | **R** | | | |
| 747 | 2007 | Regular service | 4 | 5 | **R** | | | |
| 748 | 2007 | Regular service | 4 | 5 | 6 | **R** | | |
| 749 | 2007 | Regular service | 4 | 5 | 6 | **R** | | |
| 750 | 2010 | Regular service | 1 | 2 | 3 | 4 | 5 | 6 |
| 751 | 2010 | Regular service | 1 | 2 | 3 | 4 | 5 | 6 |
| 752 | 2010 | Regular service | 1 | 2 | 3 | 4 | 5 | 6 |
| 753 | 2010 | Regular service | 1 | 2 | 3 | 4 | 5 | 6 |
| 754 | 2010 | Regular service | 1 | 2 | 3 | 4 | 5 | 6 |
| 755 | 2010 | Regular service | 1 | 2 | 3 | 4 | 5 | 6 |
| 756 | 2010 | Regular service | 1 | 2 | 3 | 4 | 5 | 6 |
| 757 | 2010 | Regular service | 1 | 2 | 3 | 4 | 5 | 6 |
| ***New Vehicles*** | | | | | | | | |
| n/a | 2011 | Regular service | 0 | 1 | 2 | 3 | 4 | 5 |
| n/a | 2011 | Regular service | 0 | 1 | 2 | 3 | 4 | 5 |
| n/a | 2011 | Regular service | 0 | 1 | 2 | 3 | 4 | 5 |
| n/a | 2011 | Regular service | 0 | 1 | 2 | 3 | 4 | 5 |
| n/a | 2011 | Regular service | 0 | 1 | 2 | 3 | 4 | 5 |
| n/a | 2012 | Regular service | | 0 | 1 | 2 | 3 | 4 |
| n/a | 2012 | Regular service | | 0 | 1 | 2 | 3 | 4 |
| n/a | 2012 | Regular service | | 0 | 1 | 2 | 3 | 4 |
| n/a | 2012 | Regular service | | 0 | 1 | 2 | 3 | 4 |
| n/a | 2012 | Regular service | | 0 | 1 | 2 | 3 | 4 |
| n/a | 2012 | Regular service | | 0 | 1 | 2 | 3 | 4 |
| n/a | 2012 | Regular service | | 0 | 1 | 2 | 3 | 4 |
| n/a | 2013 | Regular service | | | 0 | 1 | 2 | 3 |
| n/a | 2013 | Regular service | | | 0 | 1 | 2 | 3 |
| n/a | 2013 | Regular service | | | 0 | 1 | 2 | 3 |
| n/a | 2013 | Regular service | | | 0 | 1 | 2 | 3 |
| n/a | 2013 | Regular service | | | 0 | 1 | 2 | 3 |
| n/a | 2013 | Regular service | | | 0 | 1 | 2 | 3 |
| n/a | 2013 | Regular service | | | 0 | 1 | 2 | 3 |
| n/a | 2013 | Regular service | | | 0 | 1 | 2 | 3 |
| n/a | 2013 | Regular service | | | 0 | 1 | 2 | 3 |
| n/a | 2014 | Regular service | | | | 0 | 1 | 2 |
| n/a | 2014 | Regular service | | | | 0 | 1 | 2 |
| **Total Vehicles** | | | **31** | **31** | **31** | **31** | **31** | **31** |
| **Average Vehicle Age** | | | **3.0** | **2.5** | **1.7** | **2.3** | **3.3** | **4.3** |
| **Vehicles Replaced** | | | **5** | **7** | **9** | **2** | | |
| **Total Vehicle Cost** | | | **$650,000** | **$937,300** | **$1,241,253** | **$284,109** | **$0** | **$0** |

## TABLE 6.2: NON REVENUE REPLACEMENT VEHICLE PROGRAM

| FRED Vehicle # | Date Delivered | Use | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|
| ***Existing Vehicles*** | | | | ***Vehicle Age - Replacement Year (R)*** | | | | |
| 700 | 2002 | Pool Vehicle | 9 | **R** | | | | |
| 702 | 2009 | Pool Vehicle | 2 | 3 | 4 | **R** | | |
| 705 | n/a | Pool Vehicle | n/a | n/a | n/a | n/a | n/a | **R** |
| 706 | n/a | Pool Vehicle | n/a | n/a | n/a | n/a | n/a | **R** |
| 701 | 2008 | Service Vehicle | 3 | 4 | 5 | 6 | 7 | 8 |
| 704 | 2009 | Pool Vehicle | 2 | 3 | 4 | 5 | 6 | 7 |
| ***New Vehicles*** | | | | | | | | |
| n/a | 2012 | Pool Vehicle | | 0 | 1 | 2 | 3 | 4 |
| n/a | 2014 | Pool Vehicle | | | | 0 | 1 | 2 |
| n/a | 2016 | Pool Vehicle | | | | | | 0 |
| n/a | 2016 | Pool Vehicle | | | | | | 0 |
| n/a | 2018 | Service Vehicle | | | | | | |
| n/a | 2009 | Pool Vehicle | | | | | | |
| **Total Vehicles** | | | **6** | **6** | **6** | **6** | **6** | **6** |
| **Vehicles Replaced** | | | **0** | **1** | **0** | **1** | **0** | **2** |
| **Total Vehicle Cost** | | | **$0** | **$30,900** | **$0** | **$32,782** | **$0** | **$69,556** |

## TABLE 6.3: EXPANSION VEHICLES

| Expansion Vehicles | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|
| Total Expansion Vehicles | 0 | 11 | 4 | 1 | 7 | 0 |
| *Vehicles For Base Service* | *22* | *33* | *37* | *38* | *45* | *45* |
| *Total Vehicles Available* | *30* | *41* | *45* | *46* | *53* | *53* |
| Total Fleet Spare Ratio | 27% | 20% | 18% | 17% | 15% | 15% |
| **Total Vehicle Cost** | **$0** | **$1,472,900** | **$551,668** | **$142,055** | **$1,024,213** | **$0** |

## TABLE 6.4: FACILITIES IMPROVEMENT PROGRAM

| Bus Stops | Total Improvements | | | Total Cost of Improvements | | |
|---|---|---|---|---|---|---|
| | Signs | Benches | Shelters | Signs | Benches | Shelters |
| FY2011 | 0 | 0 | 0 | $0 | $0 | $0 |
| FY2012 | 107 | 20 | 20 | $17,303 | $20,600 | $206,000 |
| FY2013 | 133 | 12 | 12 | $22,153 | $12,731 | $127,308 |
| FY2014 | 115 | 3 | 3 | $19,729 | $3,278 | $32,782 |
| FY2015 | 140 | 10 | 10 | $24,739 | $11,255 | $112,551 |
| FY2016 | 105 | 5 | 5 | $19,111 | $5,796 | $57,964 |
| **Total** | **600** | **50** | **50** | **$103,034** | **$53,660** | **$536,604** |

# 7.0 FINANCIAL PLAN

The financial plan is a principal objective of the TDP. It is in this chapter that an agency demonstrates its ability to provide a sustainable level of transit service over the TDP time period, including the rehabilitation and replacement of capital assets. This chapter identifies potential funding sources for annual operating and maintenance costs, and funding requirements and funding sources for bus and service vehicle purchases.

## 7.1 OPERATING AND MAINTENANCE COSTS AND FUNDING SOURCES

FRED's proposed FY2011 operating budget is $3.9 million. This cost includes all salaries, fringe benefits, purchased services, fuel, vehicle maintenance, supplies, materials and other charges related to FRED service. Transit-related revenues in the City's budget are to come from the following sources:

*Local Sources*

- Farebox Revenue from FRED patrons
- Greyhound and Vending Revenues

Partners/Jurisdictions

- Spotsylvania County
- Stafford County
- King George County
- Caroline County
- University of Mary Washington (Fredericksburg)
- Mary Washington Healthcare (Fredericksburg)
- Star Radio Group (Fredericksburg)
- Free Lance-Star (Fredericksburg)
- Geico (Stafford)
- PETRO (Caroline)
- Evergreen (Fredericksburg)
- Idlewild Village (Fredericksburg)
- HCA Healthcare (Spotsylvania)

State/Federal Sources

- FTA Section 5307 Funds – Small Urban Areas Program
- FTA Section 5311 Funds – Rural Areas
- FTA Capital (Vehicles)
- FTA Capital (PM)
- FTA/EPA CMAQ
- VDRPT Operation Assistance
- VDRPT Capital Assistance

Key expense and revenue assumptions utilized in the TDP Financial Plan (Table 7.1) are as follows:

- Annual O&M costs during the TDP time period are based on a rate of $55.00 per revenue bus-hour (FY2011 dollars). Costs in Table 7.1 reflect Year of Expenditure (YOE) dollars. A three percent annual inflation rate has been assumed during the TDP six-year time period beginning in FY2012.
- An additional line item for new staff is added to include a mechanic at $44,419/year; customer service representative at $44,419/year; dispatcher at $33,492/year; security officer at $20,442/year; data entry clerk at $20,442/year; janitorial staff member at $20,194/year; and field supervisors at $20,194/year. These rates are assumed to increase at the inflation rate of three percent beginning in FY2012.
- Farebox revenues from FRED riders are assumed to increase to a 12 percent farebox recovery ratio per hour of service proposed. Should fare revenues fall short of this percentage, FRED will implement fare increases to reach this level by FY2015. The farebox recovery ratio in this financial plan is assumed to be 7.3 percent in FY2011 and FY2012; 9.0 percent in FY2013 and FY2014; and 12.0 percent in FY2015 and 2016.
- Other local revenues (e.g., advertising) are assumed to increase at the assumed rate of inflation (3.0% per year).
- Partner contributions are assumed to remain flat each year.

It is important to note that local funding requirements shown in Table 7.1 are based on several assumptions that may or may not occur. These assumptions will need to be revisited and revised in each year's budget process. Similarly, projects identified in the six-year TDP period can be moved forward or back, depending on availability of funding, regional grants, demographics, etc.

Federal Section 5307, Federal Section 5311, and state formula assistance funds are based on the VDRPT's Six Year Improvement Program (SYIP). This includes FRED's FY2011 Federal and State Funds as identified in the SYIP. These funds are assumed to increase at a rate of 3.6 percent in FY2012, 4.0 percent in FY2013, 4.1 percent in FY2014, 4.3 percent in FY2015, and 3.2 percent in FY2016. This is based on the FY2011 SYIP's total projection of operating assistance for the FY2011-FY2016 TDP timeframe. Any service expansion that exceeds these percentages is allocated to local contributions, as evident in the FY2015 rural area local share increase in Table 7.1. Future financial conditions may warrant changes to these percentages through annual TDP updates.

This TDP assumes FRED will apply for and be awarded a CMAQ grant in FY2012 based on the cost to implement increased service frequencies on select routes, or $1,473,466. It is assumed that CMAQ funds awarded would cover 95 percent of the cost in FY2012 with a five percent local share, 80 percent of the cost in FY2013 with a 20 percent local share, and 65 percent in FY2014 with a 35 percent local share.

Another consideration worth noting for this TDP is the potential effect of the 2010 US Census on FRED's operating budget. Currently, FRED receives operating assistance for routes in the urbanized area under the FTA Section 5307 Program. If FRED's population in the 2010 census exceeds the population limits set forth in Section 5307, FRED will lose federal funding assistance for these routes. This shortfall would

need to be absorbed by local funding sources. Although this financial plan assumes the federal funds will remain intact, an additional line item is provided under the local contributions, Local Urbanized Area less 5307 Funds, which identifies the local contribution required if 5307 funds are not available. Rural areas receiving Section 5311 funds will not be affected by this potential change.

## 7.2 Bus Purchase Costs and Funding Sources

This TDP assumes that federal funds will be available for replacement and expansion vehicles; however, funding is not guaranteed. If the availability of federal funds is less than the proposed service plan, additional local funding will be needed. Expansion and replacement costs in year of expenditure dollars are provided in Table 7.2. Vehicle costs are assumed to be $130,000 each; with three percent inflation beginning in FY2012. Total vehicle costs during the six-year TDP timeframe are projected to be $3,412,662 for replacement vehicles and $3,183,036 for expansion vehicles.

## 7.3 Support Vehicle Purchase Costs and Funding Sources

This TDP assumes federal funds for service/pool vehicle replacements will be available, and local funding sources will make up any shortfalls that occur. Replacement costs in year of expenditure dollars are provided in Table 7.2 below. Vehicle costs for support vehicles are assumed to be $30,000 with three percent inflation beginning in FY2012. The total cost for nonrevenue vehicles throughout the TDP timeframe is projected to be $133,238 in year of expenditure dollars.

## 7.4 Other Capital Costs and Funding Sources

This TDP identifies other capital items above and beyond the typical FRED capital budget. These are identified as follows:

- Software upgrades and planning software: FRED will apply for funds to add software upgrades to its existing GPS equipment, and to purchase planning software (such as Trapeze). FRED also plans to revamp its website, which will include an online option for passengers to look up where the bus is in relation to its stop; use its GPS signal to map stops in order to track the next bus; add enunciators for each stop and purchase automated fareboxes. The cost for these improvements is assumed to be $300,000.
- Bus Stops, Shelters and Amenities: This TDP also identifies new routes and existing route changes that will require new stop signs. Additionally, benches and shelters are recommended throughout the service area. Bus stop signs are assumed at $157 each, shelters are assumed at $10,000 each, and benches are assumed at $1,000 each. An inflation rate of three percent is added to the costs in FY2012. The total cost for bus stops during the six-year TDP is projected to be $103,011. Benches are projected to cost $53,360, and shelters are projected to cost $533,604 in year of expenditure dollars.

## TABLE 7.1: TDP FINANCIAL PLAN FOR ANNUAL O&M COSTS
## (Costs in Year of Expenditure Dollars)

| TDP Financial Plan for: Service O&M Costs | FY2010 | FY 2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 | FY 2016 |
|---|---|---|---|---|---|---|---|
| **Annual Service-Hours** | | | | | | | |
| City of Fredericksburg Fixed Route | 22,185 | 22,185 | 44,370 | 52,516 | 59,518 | 59,518 | 59,518 |
| Spotsylvania Fixed Route | 14,408 | 14,408 | 27,668 | 33,214 | 34,358 | 35,502 | 35,502 |
| Stafford Fixed Route | 14,535 | 14,535 | 22,950 | 28,560 | 31,992 | 34,280 | 34,280 |
| Caroline Fixed Route | 4,590 | 4,590 | 4,590 | 4,590 | 4,590 | 14,280 | 14,280 |
| King George Fixed Route | 4,080 | 4,080 | 4,080 | 4,080 | 4,080 | 9,690 | 9,690 |
| UMW FREDExpress | 1,848 | 1,848 | 1,848 | 1,848 | 1,848 | 1,848 | 1,848 |
| ***Total Transit Service-Hours*** | ***61,646*** | ***61,646*** | ***105,506*** | ***124,808*** | ***136,386*** | ***155,118*** | ***155,118*** |
| **Projected Costs** | ***$ 3,390,530*** | ***$ 3,390,530*** | ***$ 5,976,915*** | ***$ 7,282,484*** | ***$ 8,196,797*** | ***$ 9,602,267*** | ***$ 9,890,335*** |
| FRED Operating & Maintenance Costs | | | | | | | |
| Base Service from Previous Year (Urban) | $ 2,913,680 | $ 2,913,680 | $ 3,001,090 | $ 5,650,332 | $ 6,979,892 | $ 7,906,002 | $ 8,362,006 |
| Change from Previous Year (Urban) | | $ - | $ 2,484,669 | $ 1,126,262 | $ 695,838 | $ 212,451 | $ - |
| Base Service from Previous Year (Rural) | $ 476,850 | $ 476,850 | $ 491,156 | $ 505,890 | $ 521,067 | $ 536,699 | $ 1,528,329 |
| Change from Previous Year (Rural) | | $ - | $ - | $ - | $ - | $ 947,116 | $ - |
| Administration (Additional Staff Needs) | | $203,602 | $ 209,710 | $ 216,001 | $ 222,481 | $ 229,156 | $ 236,031 |
| ***Total Projected O&M Costs*** | ***$3,390,530*** | ***$3,594,132*** | ***$ 6,186,625*** | ***$ 7,498,486*** | ***$ 8,419,278*** | ***$ 9,831,423*** | ***$ 10,126,366*** |

| TDP Financial Plan for: Service O&M Costs | FY2010 | FY 2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 | FY 2016 |
|---|---|---|---|---|---|---|---|
| **Anticipated Funding Sources** | | | | | | | |
| **Federal** | **$ 1,645,436** | **$ 1,518,709** | **$ 2,691,865** | **$ 2,496,686** | **$ 2,302,025** | **$ 1,371,157** | **$ 1,398,580** |
| FTA Section 5307 (FRED Urbanized) | $ 997,454 | $ 997,454 | $ 1,033,578 | $ 1,054,250 | $ 1,075,335 | $ 1,096,842 | $ 1,118,778 |
| FTA Section 5311 Caroline | $ 107,706 | $ 107,706 | $ 111,607 | $ 113,839 | $ 116,116 | $ 118,438 | $ 120,807 |
| FTA Section 5311 King George | $ 141,753 | $ 141,753 | $ 146,887 | $ 149,825 | $ 152,821 | $ 155,877 | $ 158,995 |
| CMAQ | $ 398,523 | $ 271,796 | $ 1,399,793 | $ 1,178,773 | $ 957,753 | $ - | $ - |
| **State** | **$ 502,310** | **$ 502,409** | **$ 520,497** | **$ 541,457** | **$ 563,730** | **$ 587,721** | **$ 606,432** |
| Formula Assistance Funds (FRED) | $ 425,013 | $ 425,097 | $ 440,402 | $ 458,136 | $ 476,982 | $ 497,281 | $ 513,113 |
| Formula Assistance Funds (Caroline) | $ 29,726 | $ 29,732 | $ 30,802 | $ 32,043 | $ 33,361 | $ 34,781 | $ 35,888 |
| Formula Assistance Funds (King George) | $ 47,571 | $ 47,580 | $ 49,293 | $ 51,278 | $ 53,387 | $ 55,659 | $ 57,431 |
| CMAQ | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| **Other** | **$ 162,500** | **$ 187,500** | **$ 178,190** | **$ 180,446** | **$ 182,769** | **$ 185,162** | **$ 187,627** |
| Greyhound Fees (Fred) | $ 70,000 | $ 70,000 | $ 72,100 | $ 74,263 | $ 76,491 | $ 78,786 | $ 81,149 |
| Vending Machines (Fredericksburg) | $ 3,000 | $ 3,000 | $ 3,090 | $ 3,183 | $ 3,278 | $ 3,377 | $ 3,478 |
| MWH (Fredericksburg) | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 |
| UMW (Fredericksburg) | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 |
| Star Radio Group (Fredericksburg) | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Free Lance-Star (Fredericksburg) | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| HCA Healthcare (Spotsylvania) | $ - | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 |
| Geico (Stafford) | $ 3,000 | $ 3,000 | $ 3,000 | $ 3,000 | $ 3,000 | $ 3,000 | $ 3,000 |
| Petro (Caroline) | $ 1,000 | $ 1,000 | $ 1,000 | $ 1,000 | $ 1,000 | $ 1,000 | $ 1,000 |
| Evergreen(Fredericksburg) | $ 500 | $ 500 | $ 500 | $ 500 | $ 500 | $ 500 | $ 500 |
| Idlewild Village (Fredericksburg) | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 |
| Other | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| **Farebox Revenues** (Farebox Recovery Ratio) | **$ 255,000** | **$ 276,000** | **$ 486,540** | **$ 655,424** | **$ 737,712** | **$ 1,152,272** | **$ 1,186,840** |
| Urban | $241,232 | $262,000 | $446,558 | $609,893 | $690,816 | $974,214 | $1,003,441 |
| Rural | $13,768 | $14,000 | $39,982 | $45,530 | $46,896 | $178,058 | $183,399 |
| **Local Contributions for O&M** | **$825,284** | **$1,109,514** | **$2,309,533** | **$3,624,473** | **$4,633,042** | **$6,535,111** | **$6,746,886** |
| Urban Area (5307) | $689,958 | $974,435 | $2,197,948 | $3,512,097 | $4,515,556 | $5,595,110 | $5,776,078 |
| Rural Area (5311) | $135,326 | $135,079 | $111,585 | $112,376 | $117,486 | $940,001 | $970,808 |
| **Local Urbanized Area less 5307 Funds* | *$1,687,412* | *$1,971,889* | *$3,231,526* | *$4,566,347* | *$5,590,891* | *$6,691,951* | *$6,894,856* |
| ***Total Projected Operating Revenues*** | ***$3,390,530*** | ***$3,594,132*** | ***$6,186,625*** | ***$7,498,486*** | ***$8,419,278*** | ***$9,831,423*** | ***$10,126,366*** |

1. Service statistic increases based on service plans described in Chapters 4 and 5 of the TDP.
2. O&M cost estimates for FY2010 and FY2011 were obtained by the FRED budget and VDRPT SYIP.
3. O&M cost estimates for FY2011 through FY2016 are based on $55.00 in FY2011 dollars with 3% inflation beginning in FY2012.
4. Farebox revenues are based on a 7.4 percent to 12.0 percent farebox recovery ratio per hour of service provided.
5. Vending and Greyhound increase at the rate of inflation, all other local revenues are assumed to remain flat.
6. Federal and State operation funds are based on the FY2011 VDRPT SYIP, and increase based on the overall state projected fund increases for FY2012 through FY2016.
7. Local funds are based on the remaining balance required to implement service.
8. CMAQ funds are based on the assumption that a grant will be awarded for the service.

## TABLE 7.2: TDP FINANCIAL PLAN FOR CAPITAL COSTS
## (Year of Expenditure Dollars)

| TDP Financial Plan for: Fleet Replacement and Expansion | FY2010 | FY2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 | FY 2016 |
|---|---|---|---|---|---|---|---|
| **Number of Vehicles** | | | | | | | |
| Replacement | 1 | 5 | 7 | 9 | 2 | 0 | 0 |
| Expansion | 0 | 0 | 11 | 4 | 1 | 7 | 0 |
| Service/Pool Vehicles | 0 | 1 | 0 | 1 | 0 | 2 | 0 |
| ***Total Vehicles*** | 1 | 6 | 18 | 14 | 3 | 9 | 0 |
| **Vehicle Costs** | | | | | | | |
| Replacement | $ 300,000 | $ 650,000 | $ 937,300 | $ 1,241,253 | $ 284,109 | $ - | $ - |
| Expansion | $ - | $ - | $ 1,472,900 | $ 551,668 | $ 142,055 | $ 1,024,213 | $ - |
| Service/Pool Vehicles | $ - | $ 30,900 | $ - | $ 32,782 | $ - | $ 69,556 | $ - |
| ***Total Projected Vehicle Costs*** | ***$ 300,000*** | ***$ 680,900*** | ***$ 2,410,200*** | ***$ 1,825,703*** | ***$ 426,164*** | ***$ 1,093,769*** | ***$ -*** |
| **Anticipated Funding Sources** | | | | | | | |
| Federal | $ 240,000 | $ 544,720 | $ 2,410,200 | $ 1,460,562 | $ 340,931 | $ 875,016 | $ - |
| State | $ 48,000 | $ 108,944 | $ - | $ 292,112 | $ 68,186 | $ 175,003 | $ - |
| Local | $ 12,000 | $ 27,236 | $ - | $ 73,028 | $ 17,047 | $ 43,751 | $ - |
| ***Total Vehicle Revenues*** | ***$ 300,000*** | ***$ 680,900*** | ***$ 2,410,200*** | ***$ 1,825,703*** | ***$ 426,164*** | ***$ 1,093,769*** | ***$ -*** |

* Assumes 80/10/10 match

| TDP Financial Plan for: Facility, Equipment, and Other Capital | FY2010 | FY 2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 | FY 2016 |
|---|---|---|---|---|---|---|---|
| **Projected Facility, Equipment, and Other Capital Improvements** | | | | | | | |
| Misc. Capital (From Budget) | $ 263,156 | $ 39,820 | $ 41,015 | $ 42,245 | $ 43,512 | $ 44,818 | $ 46,162 |
| Bus Shelters | $ - | $0 | $206,000 | $127,308 | $32,782 | $112,551 | $57,964 |
| Benches | $ - | $0 | $20,600 | $12,731 | $3,278 | $11,255 | $5,796 |
| Replacement of Bus Stop Signage | $ - | $0 | $17,303 | $22,153 | $19,729 | $24,739 | $19,111 |
| GPS Software Upgrades & Planning Software | $ - | $300,000 | $ - | $ - | $ - | $ - | $ - |
| Transit Center Facilities | $ - | $ - | | $ - | | $ - | |
| ***Total Projected Capital Expenses*** | ***$ 263,156*** | ***$ 339,820*** | ***$ 284,918*** | ***$ 204,436*** | ***$ 99,302*** | ***$ 193,362*** | ***$ 129,033*** |
| **Anticipated Funding Sources** | | | | | | | |
| **Federal** | **$ -** | **$ -** | **$ -** | **$ 10,000** | **$ 8,000** | **$ -** | **$ -** |
| Other Capital Items (From SYIP) | | | | $ 10,000 | $ 8,000 | | |
| **State** | **$ -** | **$ 300,000** | **$ -** | **$ 1,000** | **$ 1,000** | **$ -** | **$ -** |
| State Capital Assistance (Not Awarded) | | $ 300,000 | | | | | |
| Other Capital Items (From SYIP) | | | | $ 1,000 | $ 1,000 | | |
| **Local** | **$ 263,156** | **$ 339,820** | **$ 284,918** | **$ 194,436** | **$ 91,302** | **$ 193,362** | **$ 129,033** |
| ***Total Other Capital Revenues*** | ***$ 263,156*** | ***$ 639,820*** | ***$ 284,918*** | ***$ 205,436*** | ***$ 100,302*** | ***$ 193,362*** | ***$ 129,033*** |

1. Anticipated funding sources for fleet replacement and expansion vehicles are assumed at 80% Federal, 10% State and 10% Local.
2. Federal funds for other capital items are assumed to increase based on the VDRPT SYIP FY2012-2016 projections.
3. State IT Grant assumes an award will be granted.
4. Misc. Capital items are based on the FY2011 budget and increase at 3% inflation rate beginning in FY2012.

# 8.0 TDP Monitoring and Evaluation

This TDP has presented a comprehensive evaluation of FREDericksburg Regional Transit (FRED) service and cost characteristics. Key elements that have been addressed in this TDP include:

- Development of goals, objectives and performance standards that are to guide further development of FRED services;
- A detailed evaluation of existing service characteristics, with identification of system strengths and weaknesses;
- A peer agency review that compares FRED service and financial characteristics to other similar-sized systems;
- A summary of rider survey results from a transit on-board survey conducted in March 2010;
- A listing of potential service and facility improvements, for consideration in the TDP;
- Recommended service improvements and vehicle purchases for inclusion in the TDP, with improvements identified by year; and
- Funding requirements and potential funding sources for recommended service improvements and vehicle purchases.

This TDP reflects an initial step in future service improvements for FRED. It will be important to coordinate closely with other transportation and land use planning efforts, to continue to monitor service performance, and to provide DRPT with annual updates regarding implementation of TDP service and facility improvements.

## 8.1 Coordination with Other Plans and Program

Goals and objectives from this TDP should be reviewed and incorporated into the City's Comprehensive Plan and its annual budget process. Close coordination is also required with Spotsylvania, Stafford, King George and Caroline Counties, as well as UMW and other financial partners for FRED. Coordination efforts must also continue with the Fredericksburg Area Metropolitan Planning Organization (FAMPO). The service plans set forth in this TDP should be included in the Long Range Transportation Plan (LRTP) and short-range 3-year Transportation Improvement Program (TIP). Coordination meetings with other transit providers as needed are suggested as a means to ensure continual communication and awareness of service planning efforts.

## 8.2 Service Performance and Monitoring

This TDP identifies specific systemwide service performance benchmarks to ensure FRED's existing performance characteristics do not degrade substantially. Corrective measures are to be taken if these monitoring efforts identify service performance degradation (e.g., through route alignment adjustments, headway and/or span of service adjustments). This TDP recommends a monitoring program that could be used for periodic service evaluation.

## 8.3 ANNUAL TDP MONITORING

The DRPT requires submittal of an annual letter that provides updates to the contents of this TDP. Recommended contents of this "TDP Update" letter include:

- A summary of ridership trends for the past 12 months.
- A description of TDP goals and objectives that have been advanced over the past 12 months.
- A list of improvements (service and facility) that have been implemented in the past 12 months, including identification of those that were noted in this TDP.
- An update to the TDP's list of recommended service and facility improvements (e.g., identify service improvements that are being shifted to a new year, being eliminated, and/or being added). This update of recommended improvements should be extended one more fiscal year to maintain a six-year planning period.
- A summary of current year costs and funding sources.
- Updates to the financial plan table presented in Chapter 7 of this TDP. This table should be extended one more fiscal year to maintain a six-year planning period.

# APPENDIX A DESCRIPTION OF FREDERICKSBURG REGIONAL TRANSIT SERVICE

The following describes the major streets on the route alignment, general span of service, and average frequency for each of the FRED Routes.

## FIXED ROUTE DEVIATION SERVICE

### F1: City of Fredericksburg

From FRED Central to Central Park and Spotsylvania Towne Centre, F1 travels south on Route 1, west on Plank Road to Altoona Drive, where the route returns to Route 1 via Plank Road. F1 continues north on Route 1 and west on Cowan Boulevard where it provides service to Central Park and Spotsylvania Towne Centre via Carl D. Silver Parkway, Trade Street and Central Park Boulevard. The route returns to FRED Central via Cowan Boulevard.

| | |
|---|---|
| Hours of Service: | Weekdays, 8:30 a.m. - 7:30 p.m. |
| Frequency: | 60 Minutes All Day |

### F2: City of Fredericksburg

From FRED Central to Lee's Hill Center, Route F2 travels west on Cowan Boulevard to Evergreen Apartments and Madonna House and returns east on Cowan Boulevard to Route 1. The route continues north on Jefferson Davis Highway (Route 1) to Eagle Village at College Avenue. The route returns south on Jefferson Davis Highway (Route 1) and Access Road to Mine Road. Route F2 travels east on Mine Road, south on Spotsylvania Avenue to Lee's Hill Shopping Center and the transfer location. Return trips travel north on Spotsylvania Avenue and Falcon Drive, north on Lafayette Boulevard, west on Lassen Lane and north on Jefferson Davis Highway (Route 1) to Cowan Boulevard and FRED Central.

| | |
|---|---|
| Hours of Service: | Weekdays, 7:30 a.m. - 8:30 p.m. |
| Frequency: | 60 Minutes All Day |

### F3: City of Fredericksburg

From FRED Central to Lee's Hill Center, Route F3 travels southeast on Stafford Avenue, northeast on William Street, southeast on Littlepage Street, northeast on Charlotte Street, east on Jackson Street and south on Lafayette Boulevard. The route continues east on Falcon Drive and south on Spotsylvania Avenue to the transfer location at Lee's Hill Center. Return trips travel back to FRED Central via the same alignment.

| | |
|---|---|
| Hours of Service: | Weekdays, 7:30 a.m. - 8:30 p.m. |
| Frequency: | 60 Minutes All Day |

**F4: City of Fredericksburg**

From FRED Central to Central Park (west), Route F4 travels north on Jefferson Davis Highway (Rte 1) to Mary Washington Boulevard, where it serves Mary Washington Healthcare. The route continues north on Jefferson Davis Highway, west on Fall Hill Avenue, north on Gordon Shelton Boulevard, and east on Carl D. Silver Parkway to Hospitality Lane. The route continues back to Carl D. Silver Parkway, where it travels south into Central Park via Trade Street and Central Park Boulevard. Route F1 returns to FRED Central via the same alignment. From FRED Central to River Club Shopping Center (east), Route F4 travels southeast on Stafford Avenue, east on Brent Street into the University of Mary Washington (UMW). From UMW, the route travels south on College Avenue, east on William Street, and south on Princess Anne Street to the train station. The route continues south on Princess Anne to Hazel Hill (return trips travel north on Caroline Street, west on Amelia Street and south on Washington Avenue). From Hazel Hill the route continues southwest on Dixon Street, west on Tyler Street, south on White Street and Hoard Street, east on South Street, south on Airport Drive to Oldfield Drive, where the route continues south on Dixon Street/Tidewater Trail to River Club Shopping Center at Glenda's Way.

| | |
|---|---|
| Hours of Service: | F4 (Central Park) - Weekdays, 7:30 a.m. - 8:30 p.m.<br>F4 (River Club Shopping Center) - Weekdays, 7:30 a.m. - 8:30 p.m. |
| Frequency: | 60 Minutes All Day |

**Route F5: City of Fredericksburg, The Downtown Loop**

Route F5 provides downtown circulator service between FRED Central, University of Mary Washington, the Train Station and Mary Washington Healthcare. From FRED Central, Route F5 travels north on Jefferson Davis Highway (Rte 1) to College Avenue where it serves Eagle Village. The route continues south on College Avenue where it serves the University of Mary Washington (UMW), east on William Street, north on Littlepage Street, east on Monroe Avenue, north on Washington Avenue, east on Maury Street, southeast on Fall Hill Avenue and Canal Street, south on Princess Anne Street, east on Dixon Street, north on Caroline Street, west on Germania Street, south on Princess Anne Street, west on Canal Street, northeast on Fall Hill Avenue and south on Jefferson Davis Highway (Route 1) to Mary Washington Boulevard, where the route serves Mary Washington Healthcare and FRED Central.

| | |
|---|---|
| Hours of Service: | Weekdays, 8:30 a.m. - 8:30 p.m. |
| Frequency: | 60 Minutes All Day |

**Route D1: Southern Stafford County**

From the VRE Train Station to Olde Forge Plaza, Route D1 travels south on Princess Anne Street, southwest on Dixon Street, east on Route 3 Bypass, and south onto Kings Highway (Route 3) to the Washington Square Walmart. The route returns north on Kings Highway (Route 3), northeast on Chatham Heights Road, west on Butler Road and Route 17 to Old Forge Plaza at Short Street. Return trips travel east on Route 17/Butler Road, north on Deacon Road, south on Culpepper Street, east on Sherwood Drive, south on Little Whim Lane, south on Town and Country Drive, west on Ferry Road, and south on Route 3 to the Washington Square Shopping Center where the route continues northwest on Route 3, Dixon Street and Caroline Street to return to the train station.

| | |
|---|---|
| Hours of Service: | Weekdays, 9:00 a.m. - 7:00 p.m. |
| Frequency: | 60 Minutes All Day |

**Route D2: Southern Stafford County**

From FRED Central to GEICO, Route D2 travels north on Jefferson Davis Highway (Route 1), and northwest on Route 17, where it serves the Target Shopping Center on Auction Drive. The route continues traveling northwest on Route 17, north on Plantation Drive to Sheffield Street, and returns via Plantation Drive and Litchfield Boulevard to return to Route 17 North. Route D2 continues northwest on Route 17 to Celebrate Virginia where it serves the Giant Shopping Center and GEICO. Return trips travel on Route 17 and US 1 to return to FRED Central.

| | |
|---|---|
| Hours of Service: | Weekdays, 8:00 a.m. - 8:00 p.m. |
| Frequency: | 60 Minutes All Day |

**D3: Stafford County**

From the Stafford County Courthouse, Route D3 travels north on Route 1, east on Allatoona Lane, north on Crescent Boulevard and west on Jason Lane. The route continues north on Route 1 to serve Aquia Towne Center and continues west on Route 610. Route D3 travels into Stafford Market Place, serves the Commuter Lot on Staffordborough Drive and returns to Route 610. The route travels west on Route 610, north on Doc Stone Road, west on Worth Avenue and crosses over Route 610 to serve the Brafferton Shopping Center. The route returns east on Route 610 to serve the Walmart, travels southeast to Greenspring Road and north on Salisbury Road. Route D3 returns to the Stafford County Courthouse via Route 610 and Route 1.

| | |
|---|---|
| Hours of Service: | Weekdays, 7:30 a.m. - 6:30 p.m. |
| Frequency: | 60 Minutes All Day |

**D4: Stafford County**

From Stafford Market Place, Route D4 travels north on Staffordborough Drive where it serves the commuter lot and returns via Staffordborough Drive to Route 610. The Route travels northwest on Route 610, north on Doc Stone Road, west on Worth Avenue and north on Onville Road, west on Barrett Heights Road, and south on Travis Lane to the Family Health Center. The route returns to Route 610 via Travis Road where it continues west on Route 610, south on Furnace Road, west on Choptank Road, south on Vista Woods Drive, east on Stevens Road, east on Huckstep Avenue, south on Choptank Road, northeast on High Street, east on Patton Drive and Southeast on Route 610. The route continues southeast on Route 610, south on Parkway Boulevard, east on Hampton Park Road/Northampton Boulevard, and north on Mine Road where it serves the Walmart. Route D4 travels southeast on Greenspring Road, east on Stafford Glen and Crossridge, where the route returns to Stafford Market Place via Greenspring and Salisbury Drive.

| | |
|---|---|
| Hours of Service: | Weekdays, 8:50 a.m. - 4:30 p.m. |
| Frequency: | 60 Minutes All Day |

**D5: Stafford County**

From FRED Central, Route D5 travels north on Jefferson Davis to serve the Rappahannock Regional Jail and continues north on Route 1 to Stafford Hospital Center and Courthouse Road (Route 630) where it serves the Stafford Courthouse. Return trips travel the same alignment back to FRED Central.

| | |
|---|---|
| Hours of Service: | Weekdays, 7:00 a.m. - 7:00 p.m. |
| Frequency: | 60 Minutes All Day |

**D6: Stafford County Express**

Route D6 is a peak hour only shuttle between the North Commuter Lot on Staffordborough Road in Stafford County and the South Commuter Lot on Mine Road.

| | |
|---|---|
| Hours of Service: | Monday - Friday, 6:30 a.m. - 8:15 a.m.; 4:30 p.m. - 7:15 p.m. |
| Frequency: | Continuous Service between Lots |

**S1: Spotsylvania County**

From Lee's Hill Center to Spotsylvania Towne Centre, Route S1 travels north on Spotsylvania Avenue, west on Market Street, south on Route 1, northwest on Southpoint Parkway, west on Ballantraye Drive, north on Stoney Creek Drive, west on Route 208 (Courthouse Road), north on Georgetown Drive, north on Leavells Road, Salem Station Boulevard, and Harrison Road, and north on Salem Church Road to Castlebridge Road and the Meadows Senior Apartments. The route continues back on Castlebridge Road and returns south on Salem Church Road, west on Harrison Road, north on Cherry Lane, east on Tara Drive, north on Kilarney Drive and east on Germanna Highway (Route 3). The Route continues east on Germanna Highway to the Ukrops Commuter Lot, travels south on Kennedy Lane, north on Salem Church Road, east on Route 3, south on Taskforce Drive, east on Maple Grove Drive, and north on Bragg Road to Spotsylvania Mall.

| | |
|---|---|
| Hours of Service: | Weekdays, 8:00 a.m. - 8:00 p.m. |
| Frequency: | 60 Minutes All Day |

**S2: Spotsylvania County**

From Lee's Hill Center to Germanna College, Route S1 travels north on Spotsylvania Avenue, west on Market Street, and south on Route 1, where it serves Southpoint Parkway and continues south on Route 1 to Highway 17. Route S2 travels east on Route 17, north on Eagle Drive, west on Lee Hill School Road, north on Monticello Street, south on Old Dominion Parkway, west on Lee Hill School Road, and north on Germanna Drive to Germanna Community College. Route S2 returns to Lee's Hill Center via Germanna Drive, Route 17 and Route 1. From Lee's Hill to Spotsylvania Courthouse, Route S2 travels north on Spotsylvania Avenue, west on Mine Road, southwest on Route 208, northwest on Brock Road, south on Spotslee Drive, west on Hardee Street, north on General Drive, east on Robert E. Lee, southeast on Brock Road, south on Pool Drive, northeast on Crestar Drive, and south on Courthouse Drive to the Marshall Center. Return trips travel via Route 208 to Lee's Hill Center.

| | |
|---|---|
| Hours of Service: | Weekdays, 8:00 a.m. - 8:00 p.m. |
| Frequency: | 120 Minutes All Day |

**S3: Spotsylvania County**

From the Ukrops to the YMCA, Route S3 travels west on Route 3 to Harrison Road Crossing where it travels south to Old Plank Road. Route S3 travels west on Old Plank Road, southeast on Harrison Road, south on Gordon Road, southeast on Rappahannock Drive, and northwest on Salem Fields Boulevard, to serve Salem Fields Shopping Center. The route continues to travel southeast on Rappahannock Drive, where it travels on Castleton Drive, Copeland Court, Buck Lane, Deerfield Drive, Fawn Circle and Piedmont Drive to Smith Station Road. The route travels southeast on Smith Station Road, east on Cobblestone Drive, southeast on Eden Brook Drive, west on Holllybrooke Drive, north on Westfield Lane, east on Silverbrook Road and south on Smith Station Road to the YMCA.

| | |
|---|---|
| Hours of Service: | Weekdays, 8:30 a.m. - 8:30 p.m. |
| Frequency: | 120 minutes All Day |

**K1: King George County**

From FRED Central to the Shops at King George, Route K1 travels south on Route 1, and east on Route 3 (Kings Highway) to serve Washington Square Shopping Center. The route continues east on Kings Highway to the Shops at King George. The route returns to FRED Central via the same route. For trips from the Shops at King George to Dahlgren, the route continues on Kings Highway eastbound and travels northeast on Ridge Road, north on James Madison Highway, east on Dahlgren Road, north on Potomac Road, northwest on Commerce Road, north on James Madison Highway, north on Owen Drive to Bradford Place and Monmouth Woods Apartments. The route returns south on James Madison Highway, and east on Kings Highway to return to the Shops at King George. From the Shops at King George to Fairview Beach, Route K1 travels west on Kings Highway, north on Comorn Road, west on Caledon Road, north on Fairview Drive, east on Riverview Drive, north on 5th Street and west on Fairview Drive to return to Caledon Road. Route K2 continues west on Caledon Road, south on Passapatanzy Road, southeast on Oakland Drive, south on Fletcher Chapel Road and east on Kings Highway to the Shops at King George.

| | |
|---|---|
| Hours of Service: | Weekdays, 7:00 a.m. - 7:00 p.m. |
| Frequency: | 120 Minutes All Day to Shops at King George |

**K2: King George County**

From FRED Central to the Shops at King George, Route K2 travels south on Route 1 and east on Kings Highway to the Washington Square Shopping Center, Sealston Post Office and The Shops at King George. Return trips travel via the same alignment to FRED Central.

| | |
|---|---|
| Hours of Service: | Weekday, 8:00 a.m. - 10:00 a.m. and 2:00 p.m. to 4:00 p.m. |
| Frequency: | 4 trips daily, 8:00 a.m., 9:00 a.m., 2:00 p.m. and 3:00 p.m. |

**C1: Caroline County**

From FRED Central, Route C1 travels south on Route 1, east on Blue & Gray Parkway, south on Tidewater Trail/Fredericksburg Turnpike to Bowling Green where it serves the Food Lion and Community Service DSS, south on Rogers Clark Boulevard to Carmel Church, north on Route 1 to Lady Smith and east on Ladysmith Road to return to Bowling Green and FRED Central.

| | |
|---|---|
| Hours of Service: | Weekdays, 7:15 a.m. until 5:45 p.m. (no service 11:10 p.m. - 12:55 p.m.) |
| Frequency: | Varies |

**C2: Caroline County**

From the Community Service Center to Dawn, Route C2 travels on Route 301 south to Dawn Center on Dawn Boulevard. Trips serving Port Royal travel north on Route 301 to Port Royal at Route 17. FRED Central Trips travel via Route 2, Route 3 and Route 1 from Bowling Green to FRED Central.

| | |
|---|---|
| Hours of Service: | Monday, Wednesday, Friday, 11:10 a.m. - 6:30 p.m. |
| Frequency: | M/F, Trips to Dawn: 11:10 a.m., 2:00 p.m., 3:00 p.m., 5:00 p.m. |
| | W, Trips to Port Royal: 11:10 a.m., 2:00 p.m., 3:00 p.m., 5:00 p.m. |
| | M/W/F, to FRED Central: 11:55 a.m., 3:55 p.m., 5:55 p.m. |
| | M/W/F, to Ladysmith & Carmel Church: 1:00 p.m. |

VRE FEEDER SERVICE

**VF1: City of Fredericksburg VRE Feeder Service**

From Estates of Idlewild to the VRE Train Station, Route VF1 morning peak trips travel through the community via Anderson Street, Perry Street, Hampton Street, Austin Drive, Walker Drive, Wilcox Avenue, Posey Lane and Saunders Drive. From Idlewild Boulevard, the route travels north on Route 1, east on Route 3, east on William Street, southeast on Kenmore Avenue and east on Lafayette Boulevard to Princess Anne Street, Dixon Street and Caroline Street where the route serves the train station. Return trips travel on Lafayette Boulevard to the Blue & Gray Parkway and Idlewild Boulevard. Afternoon trips travel from the train station to the Estates of Idlewild via Kenmore Avenue, William Street, Blue & Gray Parkway and Route 1 South.

| | |
|---|---|
| Hours of Service: | Weekdays, 4:40 a.m. - 7:30 a.m.; 2:26 p.m. - 8:30 p.m. |
| Frequency: | Meets all VRE Trains |

**VF2: Fredericksburg VRE Feeder Service**

Route VF2 provides VRE Feeder service on Cowan Boulevard from the Preserves at Smith Run, and travels north on Route 1, east on Fall Hill Avenue, east on Progress Street, south on Princess Anne Street, east on Dixon Street and north on Caroline Street to the Train Station. Afternoon trips travel north on Caroline Street, west on Canal Street, north on Fall Hill Avenue, south on Route 1, and west on Cowan Boulevard to the Preserves at Smith Run.

| | |
|---|---|
| Hours of Service: | Weekdays, 4:50 a.m. - 7:50 a.m.; 5:09 p.m. - 8:30 p.m. |
| Frequency: | Meets all VRE Trains |

**VS1: Spotsylvania County VRE Feeder Service.**

Route VS1 provides feeder service from the Gordon Road Commuter Lot and Ukrops Commuter Lot to the Train Station on Route 3. From Route 3, the route travels on Dixon Street and Caroline Street to serve the Train Station and returns to Route 3 via Lafayette Boulevard.

| | |
|---|---|
| Hours of Service: | Weekdays, 4:45 a.m. - 7:50 a.m.; 2:26 p.m. - 8:04 p.m. |
| Frequency: | Meets all VRE Trains |

FREDEXPRESS

**M1: Downtown/Central Park/Fall Hill/FRED Central**

From FRED Central, Route M1 travels south on Stafford Avenue and east on Brent Street in to the University of Mary Washington (UMW). The route returns south on College Avenue, east on William Street, south on Princess Anne Street, east on Dixon Street, and north on Caroline Street where it serves the VRE train station. The route continues north on Caroline Street, west on Herndon Street, north on Princess Anne Street, east on Germania Street, north on Caroline Street and Riverside Drive, west on Fall Hill Avenue, and south on Carl D. Silver Parkway where the route serves the Central Park Walmart. The route continues south on Carl D. Silver Parkway, west on Central Park Boulevard, and south on Trade Street where it travels through the shopping center to return to Carl D. Silver Parkway. The route returns north on Carl D. Silver Parkway, east on Fall Hill Avenue, and south on Jefferson Davis Highway where it serves Eagle Village and returns to FRED Central.

| | |
|---|---|
| Hours of Service: | Saturday, 8:30 a.m. - 9:30 p.m.<br>Sunday, 9:30 a.m. -6:30 p.m. |
| Frequency: | 60 Minutes All Day |

**M2: UMW/Central Park/Spotsylvania Towne Centre**

From FRED Central, Route M2 travels south on Stafford Avenue and east on Brent Street to serve UMW. The route returns to travel north on College Avenue, south on Jefferson Davis Highway, west on Cowan Boulevard to Central Park Boulevard and Spotsylvania Mall Drive to Spotsylvania Towne Centre. The route continues east on Central Park Boulevard, south on Trade Street, east on Commerce Street, and north on Carl T. Silver Parkway to return to Cowan Boulevard and FRED Central.

| | |
|---|---|
| Hours of Service: | Thursday, 7:00 p.m. - 10:00 p.m.<br>Friday, 7:00 p.m. - 10:00 p.m.<br>Saturday, 9:00 a.m. - 10:00 p.m.<br>Sunday, 10:00 a.m. - 7:00 p.m. |
| Frequency: | 60 Minutes All Day |

**M3: UMW/Downtown/Central Park**

From UMW, Route M3 provides late night service and travels south on College Avenue, east on William Street, south on Princess Anne Street, east on Dixon Street, north on Caroline Street, west on Amelia Street, south on Washington Avenue, west on William Street, and north on College Avenue to the UMW Front Gate. The route continues north on College Avenue, south on Jefferson Davis Highway, west on Cowan Boulevard, and north on Carl D. Silver Parkway to serve the Walmart. The route continues south

on Carl D. Silver Parkway, and west on Central Park Boulevard to Movies 15 where the route returns to UMW via Central Park Boulevard, Trade Street, Carl T. Silver Parkway, Cowan Boulevard, Jefferson Davis Highway and College Avenue.

| | |
|---|---|
| Hours of Service: | Friday, 10:00 p.m. - 1:00 a.m. |
| | Saturday, 10:00 p.m. - 1:00 a.m. |
| Frequency: | 60 Minutes All Day |

# APPENDIX B: PEER REVIEW

## 1.0 OVERVIEW

A peer analysis provides a comparison of performance characteristics among transit agencies of a similar size. The National Transit Database (NTD) is the only comprehensive source of validated operating and financial data reported by transit systems nationwide; therefore, it is the most reliable source of data to use when comparing peer systems. The NTD is updated annually with information submitted by transit agencies. The FTA reviews and confirms the accuracy of the information and publishes a final report after a reporting transit agency successfully responds to all comments and inquiries. The NTD reports various standard measures of performance that allow decision makers and other stakeholders to determine the efficiency and effectiveness of transit services on a local, regional and national basis. At the time of this peer analysis, data for FY2008 was available for all of the peer systems. Unless otherwise noted, data used in this peer analysis comes from the FY2008 NTD.

While a peer analysis based on NTD data provides operational and financial information, other aspects of service quality are not reported in the NTD, such as passenger satisfaction, vehicle cleanliness and comfort, schedule adherence and route connectivity. Additionally, unique operating and financial characteristics associated with a particular transit agency may not be apparent in the database. These factors make it difficult to find true peer systems for the analysis. For example, a system with a large base of college student riders or tourists can result in significantly different performance measures between service areas of similar size and population. Every effort is made to find peers that share similar service areas and transit environments, but no comparison can be perfect.

This technical memorandum contains the following sections. Section 2 describes the process used to select the FREDericksburg Regional Transit (FRED) peer transit systems; Section 3 provides an overview of the service area characteristics, services provided, fares, revenue hours and miles, passenger trips and operating and capital budgets for FRED and the peer systems; and Section 4 provides a detailed comparison of specific service productivity measures. These productivity measures focus on vehicle utilization, service supply, service productivity, cost efficiency and vehicle maintenance performance. A summary of the financials follows in Section 5, which highlights the revenue sources used by FRED and its peers to fund O&M and capital costs. Section 6 summarizes the key findings of the peer analysis.

## 2.0 PEER SELECTION PROCESS

This peer analysis identifies peer systems that have similar operational size, service area and demographics. While the peer analysis does not capture all of the unique characteristics found in Fredericksburg, it does provide a basis for comparison to evaluate the performance of the system. A multi-step selection process is used to determine primary and secondary screening criteria. Primary screening criteria includes the service area size in square miles, service area population, service area population density, peak vehicles, revenue miles and revenue hours. In addition to the primary screening criteria, a second level of screening identifies unique characteristics of Fredericksburg that may be applied to the peers. These criteria include an Eastern/Atlantic Location, connections to transit serving major metropolitan areas, a college located in the service area and fixed-route deviation service.

Numerous transit systems were reviewed to determine the best peer group for FRED. For this analysis, Virginia-based systems were reviewed first to capture the unique political climate for transit in the state. Williamsburg Area Transport (WAT) provides the best comparison in Virginia. WAT is unique, however, as they report their fixed routes as directly operated service and Colonial Williamsburg Foundation (CWF) routes as purchased transportation to the NTD. The CWF routes serve a unique seasonal tourism and temporary worker population, and are funded by the Colonial Williamsburg Foundation (CWF). In order to provide the best comparison between Fredericksburg and Williamsburg, the data used in the peer analysis does not include the CWF purchased transportation data.

In addition to Williamsburg, VA, two cities in Maryland are included in the final peer list. Annapolis Transit (AT) provides some fixed route deviation service and connects to a larger urbanized area, Baltimore. Charles County (VanGO) is selected because of the service area population and geography. Monongalia County Urban Transit (Mt. Line Transit) in Morgantown, West Virginia, shares similar service characteristics; although, it does have a large student population from the University of West Virginia. Finally, Middletown Transit District (MTD) in Connecticut shares the same population density and is centrally located between two urban areas with connections to Amtrak rail service. Other transit systems that were identified as potential peers but not chosen for the final analysis include Petersburg, Charlottesville, and Lynchburg (VA), Portland (ME), St. Joseph (MO), Fayetteville (NC), Huntington (WV), Abingdon (MD), Myrtle Beach (SC) and Williamsport (PA). The results of the final peer selection are displayed in Table 2.1.

**TABLE 2.1: FINAL PEER SELECTION**

| Transit Agency | Location | Service Area | | Total Peak Vehicles |
|---|---|---|---|---|
| | | Sq. Miles | Pop. | |
| Williamsburg Area Transport (WAT) | Williamsburg, VA | 144 | 57,000 | 24 |
| Annapolis DOT (Annapolis Transit) | Annapolis, MD | 100 | 90,000 | 18 |
| Monongalia County Urban Transit (Mt. Line Transit) | Morgantown, WV | 201 | 73,278 | 27 |
| Middletown Transit District (MTD) | Middletown, CT | 193 | 90,320 | 15 |
| Charles County (VanGO) | Charles County, MD | 458 | 120,564 | 27 |
| **Peer Average** | | **219** | **86,232** | **22** |
| *FREDericksburg Regional Transit (FRED)* | *Fredericksburg, VA* | *242* | *113,716* | *22* |

# 3.0 Peer System Overview

The following is a general overview of the peer system characteristics. This includes the service area characteristics, services provided, fares for each of the peer systems, revenue hours and miles, passenger trips and FY2008 O&M and capital budgets. Further comparisons of ridership, revenue miles, revenue hours and operating and capital budgets are provided in Section 4 – Service Productivity Comparisons and Section 5 – Financial Analysis.

Because FREDericksburg Regional Transit (FRED) only operates fixed route deviation service, data in the NTD is reported as directly operated. No FRED data is recorded for demand response or purchased transportation. Other than Annapolis, all of the peer agencies report directly operated, purchased transportation, and/or demand response service. In order to compare FRED service, which provides deviation service as part of its fixed route service, to the peer systems that provide deviation service as part of their demand response service, the sum of demand response, directly operated, and purchased transportation is used in this analysis. The other exception being Williamsburg, in which the sum of demand response and directly operated data are used.

## 3.1 Service Area Characteristics

As discussed in Section 2.0, five peers were identified for the FRED peer review, Williamsburg Area Transport (WAT), Annapolis Transit (AT), Monongalia County Urban Transit (Mt. Line Transit), Middletown Transit District (MTD), and County Commissioners of Charles County (DCS VanGO). Fredericksburg's service area population is 32 percent higher than peer average population at 113,716 and closely matches Charles County's population. FRED's service area of 242 square miles is 10 percent higher than the peer average. FRED's large service area with a smaller population results in a population density of 470 people per square mile. This is only two percent lower than the peer average, with population densities ranging from 263 people per square mile in Charles County to 900 people per square mile in Annapolis, MD. It is important to note that population figures may not accurately depict the real population of the service area. New census data from the 2010 census will provide a better estimate of population and densities. Table 3.1 displays the population, square miles and density for the service areas in 2007.

**TABLE 3.1: SERVICE AREA CHARACTERISTICS**

| Location | Service Area Population | Service Area Size (Sq. Miles) | Pop. Density |
|---|---|---|---|
| Williamsburg, VA | 57,000 | 144 | 396 |
| Annapolis, MD | 90,000 | 100 | 900 |
| Morgantown, WV | 73,278 | 201 | 365 |
| Middletown, CT | 90,320 | 193 | 468 |
| Charles County, MD | 120,564 | 458 | 263 |
| **Peer Average** | **86,232** | **219** | **478** |
| *Fredericksburg, VA* | *113,716* | *242* | *470* |

## 3.2 SERVICES PROVIDED

The following lists the service hours for the peer systems as they were reported to the NTD for fiscal year 2008. All of the peer agencies provide some level of service on Saturday, with Annapolis and Morgantown providing limited Sunday service.

| | |
|---|---|
| ▪ WAT – Williamsburg, VA | Monday – Saturday: 6:00 a.m. – 10:00 p.m. |
| ▪ Annapolis Transit – MD | Monday – Saturday: 5:30 a.m. – 10:30 p.m.<br>Sunday : 8:00 a.m. – 7:00 p.m. |
| ▪ MTD – Middletown, CT | Monday – Friday: 5:45 a.m. – 6:45 p.m.<br>Saturday: 8:00 a.m. – 6:00 p.m. |
| ▪ DCS VanGO – Charles County, MD | Monday – Saturday: 7:00 a.m. – 9:00 p.m. |
| ▪ Mt. Line Transit – Morgantown, WV | Monday – Friday: 6:00a.m. – 12:00 a.m.<br>Saturday: 7:00 a.m. – 12:00 a.m.<br>Sunday: 8:00 a.m. – 12:00 a.m. |
| ▪ FRED – Fredericksburg, VA | Monday – Friday: 4:45 a.m. – 8:35 p.m.<br>Saturday (FREDEx): 9:00 a.m. – 1:00 a.m. *<br>Sunday (FREDEx): 1:00 p.m. – 7:00 p.m.*<br>*FREDEX service only operates during the school year; 9+ months/year |

## 3.3 FARES

The following Table 3.2 shows the base fares for the peer systems and FRED's service as they are listed on the various agency websites in March 2010. WAT and MTD have the highest fare at $1.25 and FRED has the lowest at $.50. Most of the peers provide some form of pass program, student fares, and senior/disabled discounts. Mt. Line Transit adds an additional fare of $.25 to the fixed route fare of $.75 for passengers wanting to make a preapproved deviation.

## 3.4 REVENUE HOURS AND MILES

Revenue hours and revenue miles identify an average of systems with similar levels of service to assess productivity measures fairly. The revenue hours and revenue miles are a combination of the fixed route and demand response service for all peer systems, with the purchase transportation totals removed from WAT's total.

### REVENUE HOURS

FRED's revenue hours of 65,531 are 13 percent higher than the peer average of 57,992, as shown in Table 3.3. Two of the agencies (MTD and WAT) are only 76 percent of the average and VanGO has the highest at 31 percent above the average.

**TABLE 3.2: PEER SYSTEM FARES**

| Agency | Adult Fare | Transfers | Children | Seniors/ Disabled | Students | Passes |
|---|---|---|---|---|---|---|
| **WAT** | $1.25 | $0.50 | Free | $0.50 | Free | All Day: $1.50 |
| **Annapolis Transit** | $1.00 | Free | | $0.50 | $0.50 | Free Fare Zones<br>County Connector: $1.00 - $4.00<br>Summer Youth Pass: $25.00<br>10 Ride Fare Card: $9.50<br>Monthly Local Route Pass: $50.00<br>Monthly Unlimited: $100.00<br>3 Months Local: $120.00<br>3 Months Unlimited: $400.00<br>Annual Pass: $400.00<br>AACC Student: $40.00/Month |
| **MTD** | $1.25 | Free | | $0.60 | n/a | 10 Rides: $11.25<br>20 Rides: $20.00<br>20 Medicare: $60.00<br>All Day: $3.25<br>31 Day Fixed Routes (18-64): $36.00<br>31 Day Fixed Routes (6-17): $25.00<br>31 Day Rural (18-64): $34.00<br>31 Day Fixed & Rural (18-64): $42.00<br>31 Day Fixed & Rural (6-17) : $29.00 |
| **DCS VanGO** | $1.00 | $1.00 | Free (6 & Under) | $0.50 | n/a | All Day: $2.00<br>Senior/Disabled All Day: $1.00<br>$10.00 Coupon Book for 1-way trips: $8.00 |
| **Mt. Line Transit** | $.75 (Deviation +$.25) | $0.75 | | $.35 (Deviation +$.25) | Free | 15 Ride Pass: $10.00<br>30 Day Pass (Not Grayline): $35.00<br>Grayline to Pittsburgh: $3.00 - $35.00 |
| **FRED** | $0.50 | $0.50 | Free (3 & Under) | | Free (UMW) | VRE Feeder: $1.25<br>Adult Monthly Pass: $25.00<br>VRE Monthly Pass: $40.00 |

**TABLE 3.3: REVENUE HOURS**

| Transit Agency | Revenue Hours |
|---|---|
| Williamsburg Area Transport (WAT)* | 44,322 |
| Annapolis DOT (Annapolis Transit) | 65,058 |
| Monongalia County Urban Transit (Mt. Line Transit) | 60,664 |
| Middletown Transit District (MTD) | 43,924 |
| Charles County (VanGO) | 75,993 |
| **Peer Average** | **57,992** |
| *FREDericksburg Regional Transit (FRED)* | *65,531* |

**WAT does not include 35,304 Revenue Hours for CWF Service*

### Revenue Miles

FRED has 110 percent of the peer average for revenue miles at 986,916 compared to 899,352, as shown in Table 3.4. MTD provides the fewest revenue miles at 70 percent of the peer average, and VanGO has the highest, at 148 percent of the average.

**TABLE 3.4: REVENUE MILES**

| Transit Agency | Revenue Miles |
|---|---|
| Williamsburg Area Transport (WAT)* | 699,394 |
| Annapolis DOT (Annapolis Transit) | 806,664 |
| Monongalia County Urban Transit (Mt. Line Transit) | 1,025,236 |
| Middletown Transit District (MTD) | 633,564 |
| Charles County (VanGO) | 1,331,903 |
| **Peer Average** | **899,352** |
| *FREDericksburg Regional Transit (FRED)* | *986,916* |

*WAT does not include 382,241 Revenue Miles for CWF Service

## 3.5 Passenger Trips

The peer average for passenger trips is 809,132. FRED's total of 427,394 passenger trips is half of the average (53%). This is comparable to MTD, which is 55 percent of peer average and VanGO with 63 percent of the peer average. Annapolis Transit is 84 percent higher than the average; however, it is also has the highest density among the peers. Table 3.5 shows the unlinked passenger trips for FRED and the peer systems as reported in the NTD. In 2009, FRED passenger trips jumped over 500,000 in 2009.

**TABLE 3.5: PASSENGER TRIPS**

| Transit Agency | Passenger Trips |
|---|---|
| Williamsburg Area Transport (WAT)* | 774,484 |
| Annapolis DOT (Annapolis Transit) | 1,486,633 |
| Monongalia County Urban Transit (Mt. Line Transit) | 829,088 |
| Middletown Transit District (MTD) | 444,974 |
| Charles County (VanGO) | 510,483 |
| **Peer Average** | **809,132** |
| *FREDericksburg Regional Transit (FRED)* | *427,394* |

*WAT Does not include 2,314,129 passenger trips on CWF service

## 3.6 Operating and Capital Budgets

The following Tables 3.6 and 3.7 display the operating and capital budgets in FY2008 for FRED and the peer systems. Further detail on these tables is provided in Section 5.0 of this memorandum.

### Operating Budget

FRED's total operating budget of $3,345,639 is 91 percent of the peer average of $3,668,085. VanGO has the highest operating budget at 141 percent of the peer average, and MTD has the lowest at 67 percent of the peer average. A majority of FRED's operating funds come from federal sources; whereas, local sources provide the bulk of the peer average.

**TABLE 3.6: FY2008 OPERATING FUNDS BY SOURCE**

| Transit Agency | Fares | Local | State | Federal | Other | Total |
|---|---|---|---|---|---|---|
| Williamsburg Area Transport (WAT)* | $322,127 | $1,241,032 | $683,217 | $680,701 | $18,750 | $2,945,827 |
| Annapolis DOT (Annapolis Transit) | $796,290 | $1,648,013 | $1,178,487 | $870,378 | $62,773 | $4,555,941 |
| Monongalia County Urban Transit (Mt. Line Transit) | $934,574 | $633,000 | $3,580 | $906,664 | $734,730 | $3,212,548 |
| Middletown Transit District (MTD) | $293,842 | $663,428 | $1,033,828 | $225,397 | $240,193 | $2,456,688 |
| Charles County (VanGO) | $311,655 | $2,305,202 | $1,414,888 | $1,102,624 | $35,050 | $5,169,419 |
| **Peer Average** | **$531,698** | **$1,298,135** | **$862,800** | **$757,153** | **$218,299** | **$3,668,085** |
| *FREDericksburg Regional Transit (FRED)* | *$116,662* | *$328,449* | *$922,598* | *$1,907,348* | *$70,582* | *$3,345,639* |

*WAT Local total is $3,278,222 minus the CWF funds of $2,037,190

### Capital Budget

Two of the transit agencies (Annapolis Transit and Middletown Transit) did not provide data on capital funds to the NTD; thus, a true average is difficult to calculate. A comparison of Fredericksburg, VA with Williamsburg, VA reveals that FRED's capital budget is approximately 13 percent higher than WAT. WAT did not report capital funds for purchased transportation (CWF) routes. However, capital budgets tend to fluctuate widely for small systems, based on such things as bus acquisitions and one time facility acquisitions or improvements.

**TABLE 3.7: FY2008 CAPITAL FUNDS BY SOURCE**

| Transit Agency | Local | State | Federal | Other | Total |
|---|---|---|---|---|---|
| Williamsburg Area Transport (WAT)* | $29,474 | $491,466 | $2,325,800 | $0 | $2,846,740 |
| Annapolis DOT (Annapolis Transit) | | | | | |
| Monongalia County Urban Transit (Mt. Line Transit) | $0 | $0 | $0 | $50,760 | $50,760 |
| Middletown Transit District (MTD) | | | | | |
| Charles County (VanGO) | $206,397 | $19,170 | $153,360 | $0 | $378,927 |
| **Peer Average** | **$78,624** | **$170,212** | **$826,387** | **$16,920** | **$1,092,142** |
| *FREDericksburg Regional Transit (FRED)* | *$408,682* | *$239,433* | *$2,592,462* | *$0* | *$3,240,577* |

# 4.0 Service Productivity

This section provides service productivity measures with factors including vehicle utilization—the number of peak vehicles per revenue hour and mile; service supplied, which includes revenue miles and revenue hours per capita and revenue miles and hours per service area square mile; service effectiveness, passengers per revenue mile and passengers per revenue hour; cost efficiency, which includes operating cost per passenger trip, revenue hour and revenue mile; and vehicle maintenance performance from revenue vehicle failures.

## 4.1 Vehicle Utilization

Vehicle utilization is a productivity measure based on the total number of peak vehicles available per revenue mile and revenue hour. This measure compares the peers' ability to efficiently use the vehicles available to provide the service.

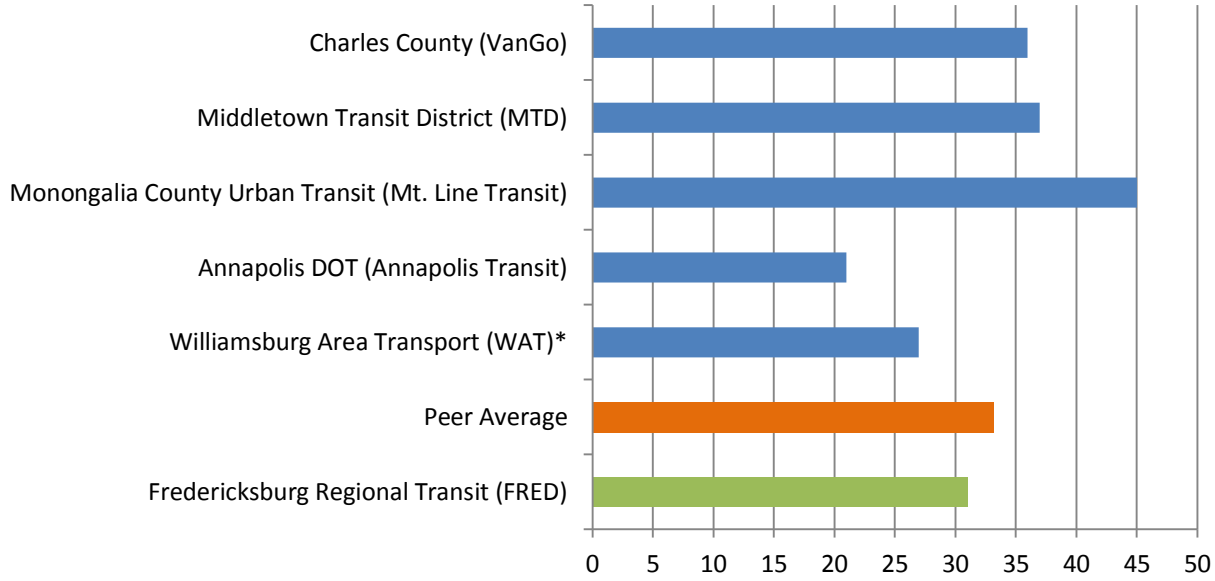
### Vehicles Available

The average number of total vehicles available among the peer systems is 33 vehicles. FRED has 93 percent of this average with 31 vehicles. Mt. Line Transit has the most vehicles at 136 percent of the average and Annapolis has the fewest available at 63 percent of the average. Figure 4.1 shows the total vehicles available among the peer systems and FRED. This total includes all vehicles reported for both fixed route and demand response where available. It does not include WAT's fleet for CWF routes recorded under purchased transportation.

### Peak Vehicles

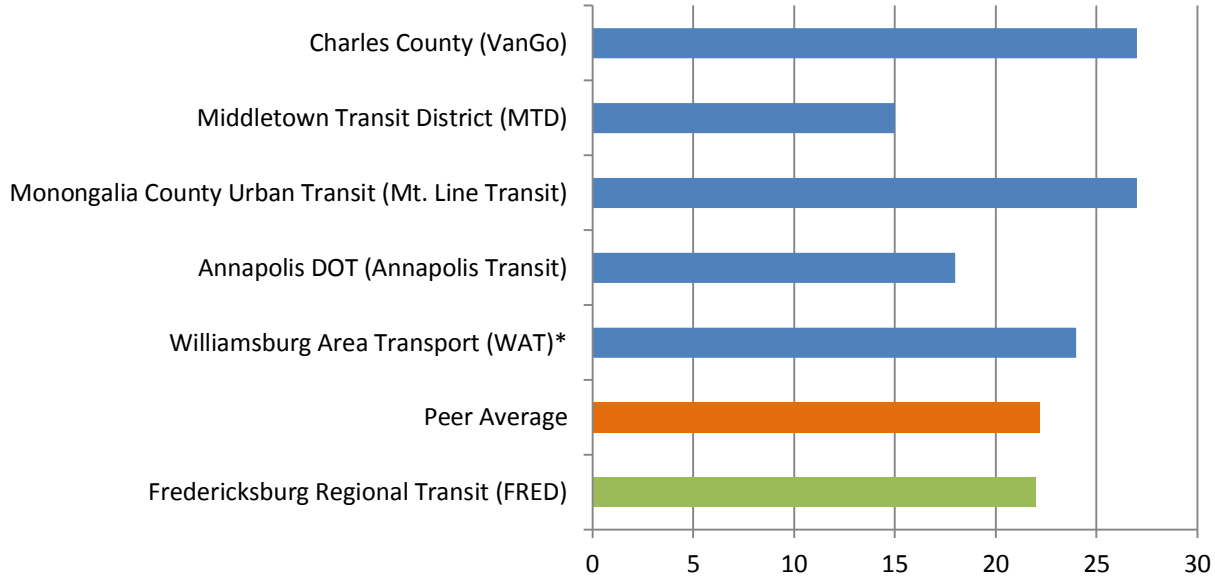
The number of peak vehicles available is used to calculate vehicle utilization as it reflects the maximum number of buses needed during the heaviest levels of service. The peer system average peak vehicle requirement is 22 vehicles, as shown in Figure 4.2. This is the same as FRED. Mt. Line Transit and VanGO have the highest peak vehicle requirement at 27 vehicles and MTD has the lowest. Again, these include both fixed route and demand response when reported. WAT totals do not include the CWF requirements.

**FIGURE 4.1: TOTAL VEHICLES AVAILABLE**




* WAT does not include 21 Vehicles for CWF Service

**FIGURE 4.2: PEAK VEHICLES REQUIRED**

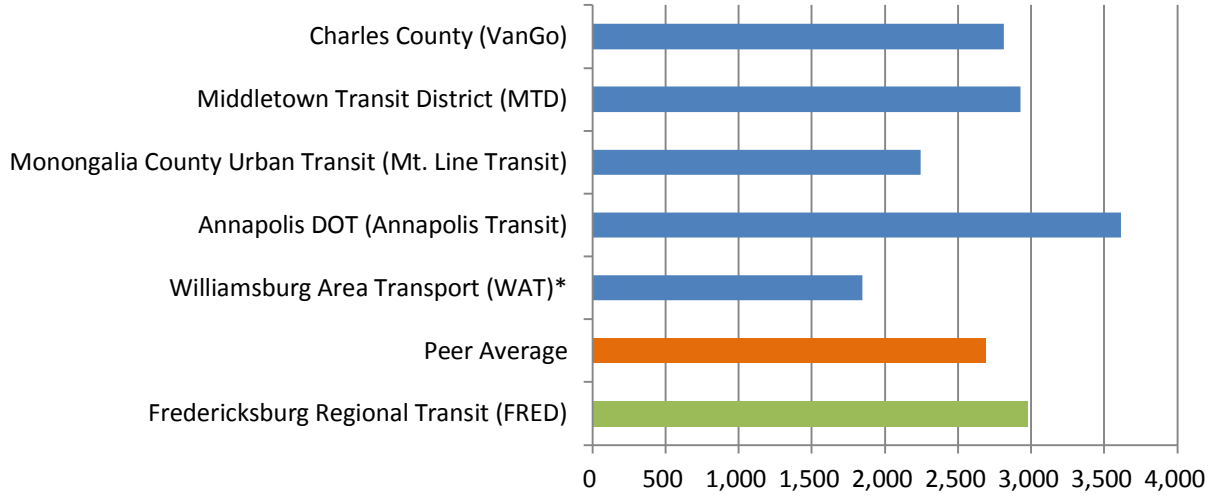



* WAT does not include 16 PT vehicles for CWF service

### Revenue Hours per Peak Vehicle

The ratio of revenue hours per peak vehicle is an efficiency measure that compares the total revenue hours the peer systems' operate their peak vehicles. FRED operates 2,979 revenue hours per peak vehicle, which is 111 percent of the average. WAT operates the fewest at 69 percent of the average and Annapolis operates the most at 134 percent of the average, as shown in Figure 4.3.

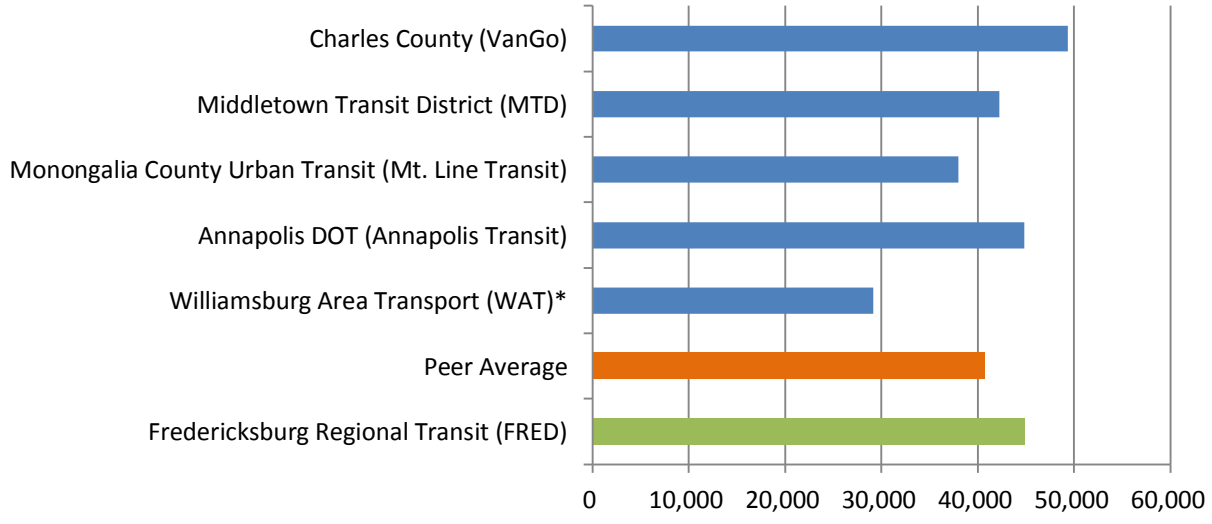
**FIGURE 4.3: REVENUE HOURS PER PEAK VEHICLE**




### Revenue Miles per Peak Vehicle

The ratio of revenue miles per peak vehicle measures how efficiently the peer agencies operate their peak vehicles based on total revenue miles. FRED operates 44,860 revenue miles per peak vehicle compared to the peer average of 40,699 (110%). WAT operates the fewest at 72 percent of the average and VanGO operates the most at 121 percent. Annapolis Transit has almost the same ratio as FRED. Figure 4.4 shows the revenue miles per peak vehicle for FRED and its peer systems.

**FIGURE 4.4: REVENUE MILES PER PEAK VEHICLE**



## 4.2 SERVICE SUPPLIED

Measures of service supplied include ratios of revenue hours and miles per service area population (or per capita) and square miles of service. The average service area population among the peers is 86,232 people. FRED's population of 113,716 is 132 percent of the average. Charles County has the largest population at 140 percent of the peer average and Williamsburg has the lowest at 66 percent of the average. It is important to note, however, that population figures are from the 2000 census, and may actually be higher. FRED's service area is 242 square miles, compared to the peer average of 219 (110%). Charles County has the largest service area, at over twice the size of the peer average (209%). Annapolis has the lowest with a service area that is 46 percent of the peer average. As a result, Charles County has the lowest population density and Annapolis has the highest among the peers. Table 4.1 shows the service area population, square miles and density for FRED and the peer systems.

**TABLE 4.1: SERVICE SUPPLIED MEASURES**

| Transit Agency | Service Area Pop | Sq. Miles | Density |
|---|---|---|---|
| Williamsburg Area Transport (WAT)* | 57,000 | 144 | 396 |
| Annapolis DOT (Annapolis Transit) | 90,000 | 100 | 900 |
| Monongalia County Urban Transit (Mt. Line Transit) | 73,278 | 201 | 365 |
| Middletown Transit District (MTD) | 90,320 | 193 | 468 |
| Charles County (VanGO) | 120,564 | 458 | 263 |
| **Peer Average** | **86,232** | **219** | **478** |
| *FREDericksburg Regional Transit (FRED)* | *113,716* | *242* | *470* |

### REVENUE HOURS PER SERVICE AREA POPULATION

The ratio of revenue hours per service area population provides a measure of how many service hours are supplied per person in the community. The peer average is .69 hours per person. FRED provides 84 percent of that average at .58 hours per person. Mt. Line Transit provides the most, at .83 hours per person (120%). Mt. Line Transit does provide later service and Sunday service to accommodate the large student population from the University of West Virginia. Middletown Transit provides the fewest revenue hours per person at .49 hours per person (71%). Figure 4.5 shows the revenue hours per service area population for FRED and the peer systems.

### REVENUE MILES PER SERVICE AREA POPULATION

The ratio of revenue miles per service area population also reveals how much service is supplied to citizens throughout the service area. The peer system average is 10.66 revenue miles per person. FRED provides 8.68 revenue miles per person, which is 81 percent of the peer average. Like the revenue hours per service area, Mountain Line Transit provides the most at 13.99 (131%) and Middletown Transit District provides the fewest at 7.01 revenue miles per person (66%). Figure 4.6 shows the revenue miles per service area population for FRED and the peer systems.

**FIGURE 4.5: REVENUE HOURS PER SERVICE AREA POPULATION**

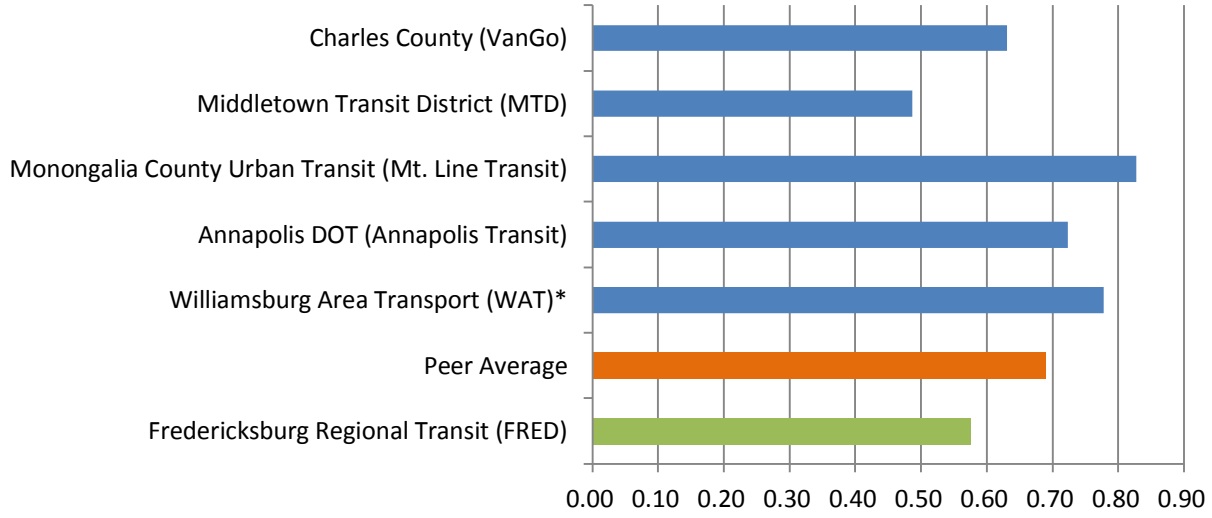
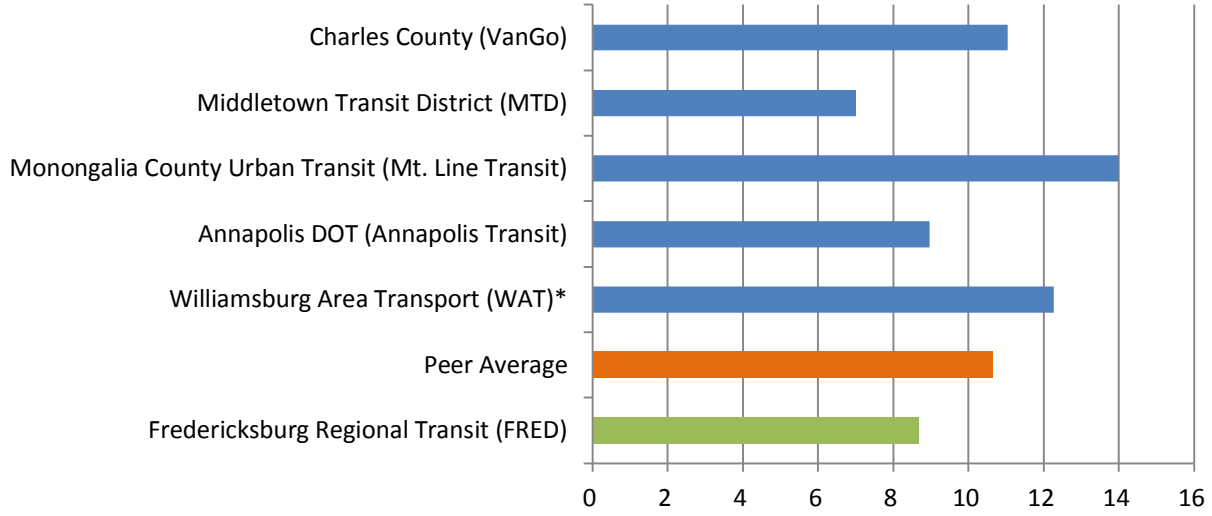

Charles County (VanGo)
Middletown Transit District (MTD)
Monongalia County Urban Transit (Mt. Line Transit)
Annapolis DOT (Annapolis Transit)
Williamsburg Area Transport (WAT)*
Peer Average
Fredericksburg Regional Transit (FRED)
0.00 0.10 0.20 0.30 0.40 0.50 0.60 0.70 0.80 0.90

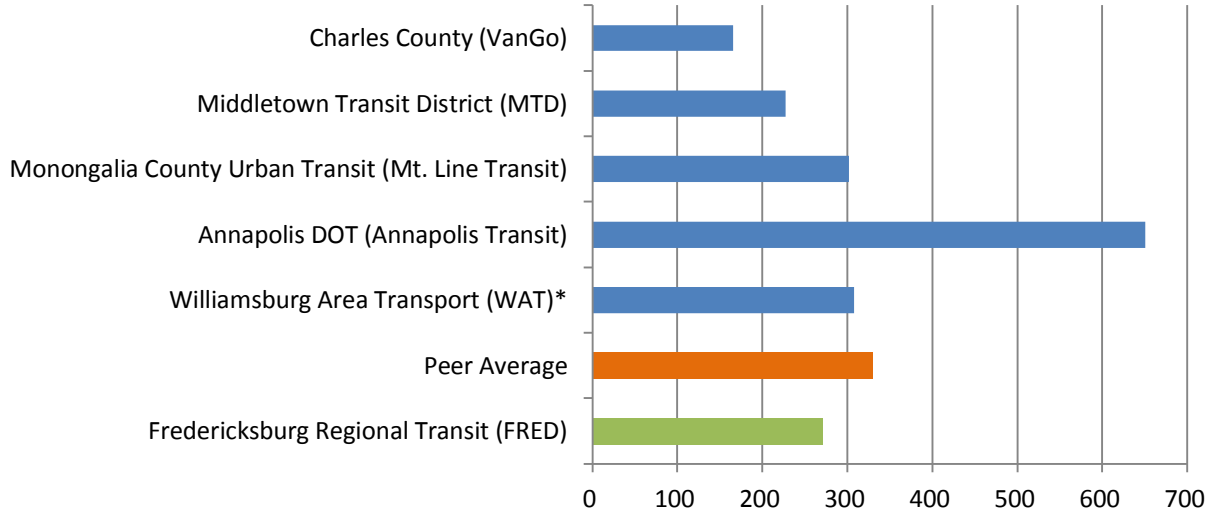
**FIGURE 4.6: REVENUE MILES PER SERVICE AREA POPULATION**


Charles County (VanGo)
Middletown Transit District (MTD)
Monongalia County Urban Transit (Mt. Line Transit)
Annapolis DOT (Annapolis Transit)
Williamsburg Area Transport (WAT)*
Peer Average
Fredericksburg Regional Transit (FRED)
0 2 4 6 8 10 12 14 16

### Revenue Hours per Square Mile of Service Area

The ratio of revenue hours per square mile of service area reveals how many hours of service is provided throughout the service area. The peer average is 330.74 revenue hours per square miles of service area. This is likely influenced by Annapolis Transit, which provides 650.58 revenue hours per service area, which is almost twice the peer average (197%). FRED provides 270.79 hours per square mile, which is 82 percent of the peer average. Charles County provides the fewest hours at 165.92 hours per square miles of service (50%). When compared with the remaining peers, WAT, MT. Line Transit and MTD, FRED is in line with the average for this measure, as shown in Figure 4.7.

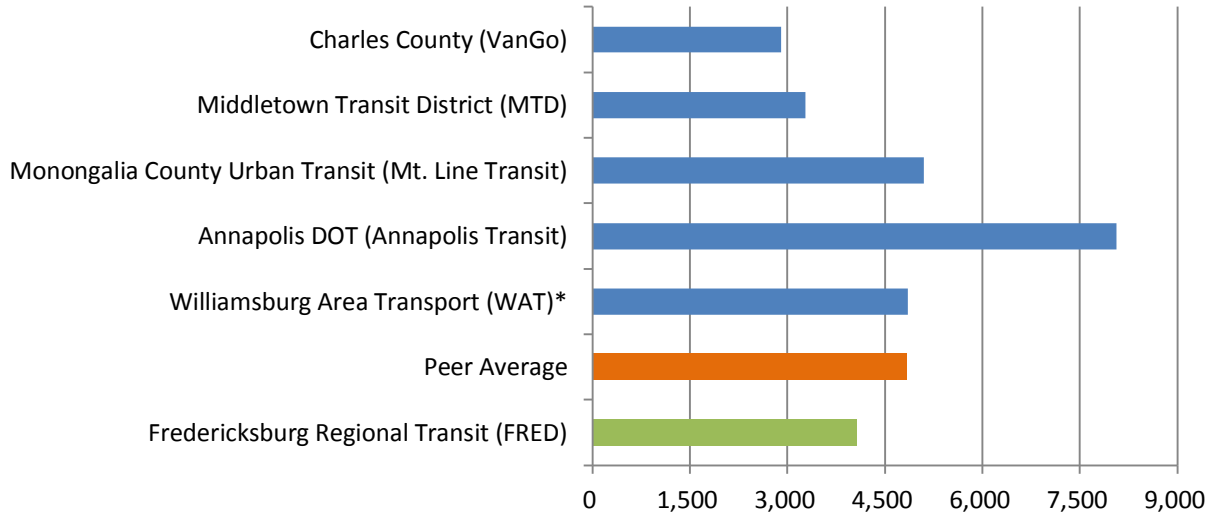
**FIGURE 4.7: REVENUE HOURS PER SQUARE MILE OF SERVICE AREA**




### Revenue Miles per Square Mile of Service Area

The ratio of revenue miles per square mile of service area is another common measure of how extensively the service area is covered. The peer average is 4,843 revenue miles per square mile of service area. FRED provides 84 percent of that total with 4,078.17 miles per square mile. As expected with a smaller service area, Annapolis Transit provides the most with 8,066.64 miles per square mile (167%). Both Charles County and Middletown Transit provide the fewest at 60 percent and 68 percent of the peer average, respectively. Figure 4.8 shows the revenue miles per square mile of service area for FRED and the peer systems.

**FIGURE 4.8: REVENUE MILES PER SQUARE MILE OF SERVICE AREA**



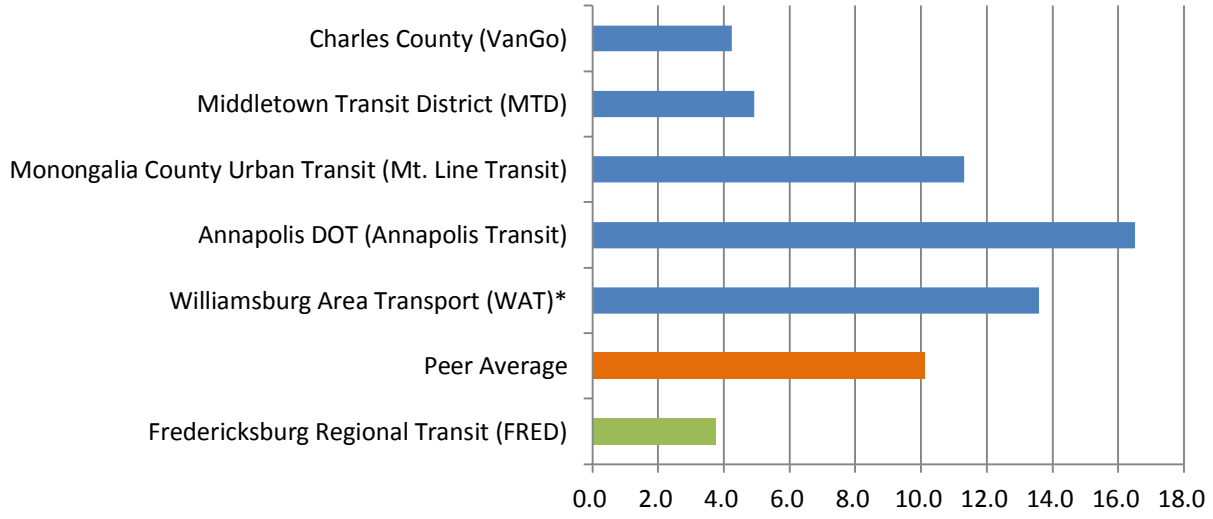
## 4.3 SERVICE PRODUCTIVITY

Service productivity ratios measure how effectively the service transports passengers relative to the level of service. These ratios include passenger trips per service area population, passenger trips per revenue hour and passenger trips per revenue mile.

### PASSENGER TRIPS PER SERVICE AREA POPULATION

This measure reveals how many passenger trips occur in relation to the size of the population. The peer average is 10.1 passenger trips per person. FRED is the lowest among the peers at 3.8 trips per person. Annapolis has the highest at 16.5 trips per person (163%). Williamsburg is also higher than the average, at 13.6 trips per person. This figure does not include the 2,314,129 passengers on the CWF service, but does include fixed route service that transports temporary workers and some tourists in the summer months to tourist destinations in the service area. Charles County was slightly higher than FRED at 4.2 trips per person, which is 42 percent of the peer average. Figure 4.9 shows the passenger trips per service area population for FRED and the peer systems.

**FIGURE 4.9: PASSENGER TRIPS PER SERVICE AREA POPULATION**




### PASSENGER TRIPS PER REVENUE HOUR

This measure reveals how much of the service is consumed based on the hours of service provided. Again FRED is lower than the peers and the peer average of 14.2, with 6.5 trips per revenue hour or 46 percent. Annapolis has the highest ratio of trips per hour at 22.9 (161%), followed by WAT at 17.5 (123%). Charles County has a similar trip per hour ratio to FRED at 6.7 or 47 percent. Figure 4.10 displays the ratio of passenger trips per revenue hour for FRED and the peer systems.

PASSENGER TRIPS PER REVENUE MILE

The ratio of passenger trips per revenue mile measures the effectiveness of the service based on the amount of service consumed per miles of service provided. The peer average is .97 passenger trips per revenue mile. FRED's ratio is .43 passenger trips per revenue mile or 45 percent of the peer average. This is slightly higher than Charles County with .38 trips per mile (40%). As expected with its smaller service area and higher densities, Annapolis has the highest ratio at 1.84 trips per mile, which is 190 percent of the peer average. Annapolis is followed by Williamsburg at 1.11 trips per mile (114%). Figure 4.11 shows the ratio of passenger trips per revenue mile for FRED and the peer systems.

**FIGURE 4.10: PASSENGER TRIPS PER REVENUE HOUR**

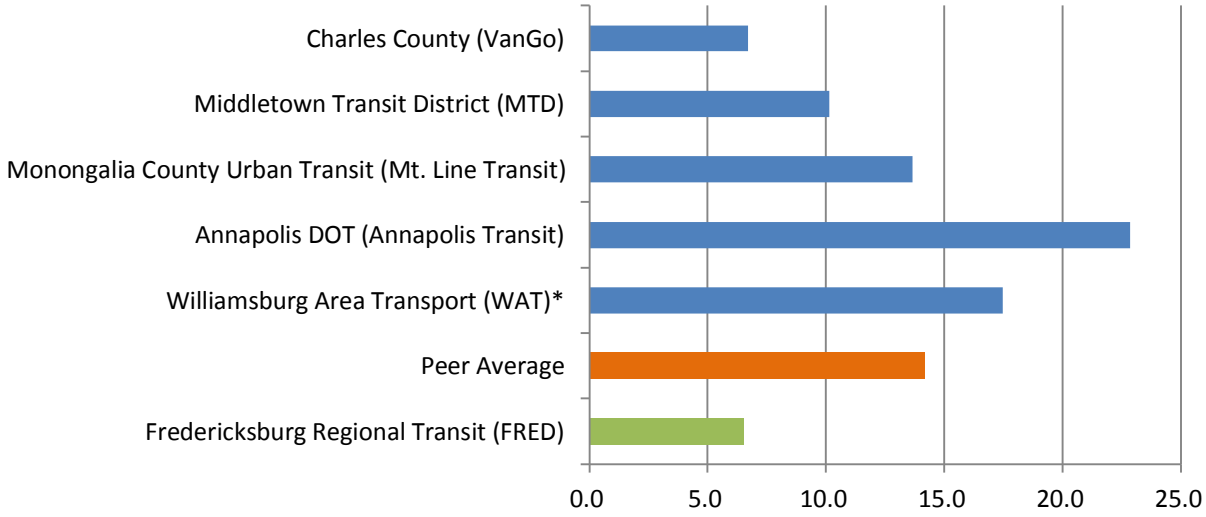
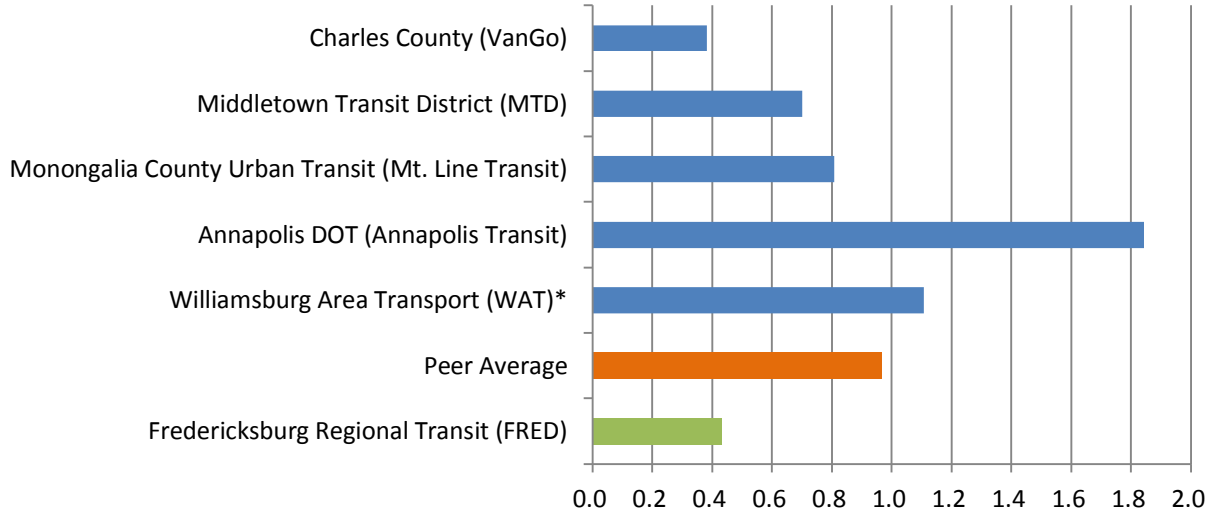



**FIGURE 4.11: PASSENGER TRIPS PER REVENUE MILE**



## 4.4 Cost Efficiency

Cost efficiency ratios compare the agency's ability to operate efficiently based on operating costs per passenger trip, revenue hour and revenue mile. Compared to the peer average of $3,290,878, FRED's operating costs are in line with the peers at 90 percent of the average. Charles County has the highest operating costs at 141 percent of the average, and Middletown Transit has the lowest costs at 66 percent of the average. Table 4.2 shows the total operating costs for FRED and the peers. These costs include the total cost for directly operated, purchased transportation and demand response service. As previously mentioned, the total for WAT does not include $2,021,946 for purchased transportation used to operate the CWF routes.

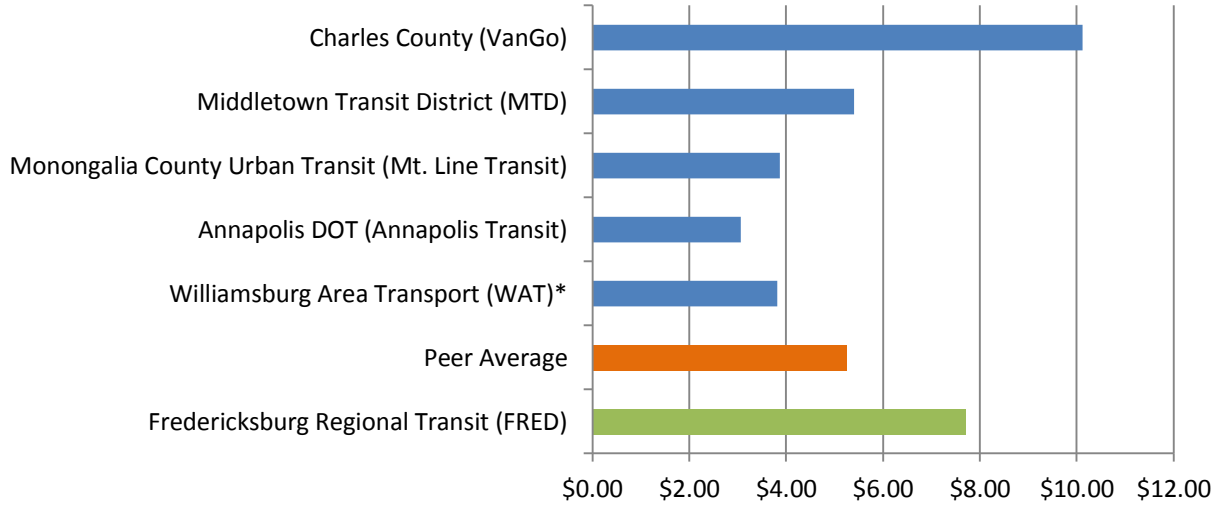
**TABLE 4.2: OPERATING COSTS**

| Transit Agency | Operating Cost |
|---|---|
| Williamsburg Area Transport (WAT)* | $2,961,071 |
| Annapolis DOT (Annapolis Transit) | $4,555,941 |
| Monongalia County Urban Transit (Mt. Line Transit) | $3,212,548 |
| Middletown Transit District (MTD) | $2,406,138 |
| Charles County (VanGO) | $5,169,417 |
| **Peer Average** | **$3,661,023** |
| *FREDericksburg Regional Transit (FRED)* | *$3,290,878* |

### Operating Cost per Passenger Trip

The ratio of operating cost per passenger trip is a measure of efficiency based on how much one passenger trip costs the transit agency. The peer average is $5.26 per trip. FRED's cost is higher than the peer average at $7.70 per trip or 146 percent of the average. This is lower than Charles County's cost, which is $10.13 per trip. Annapolis Transit has the lowest cost per trip at $3.06 or 58 percent of the peer average. Williamsburg has a similar cost per trip at $3.82 (73%). Figure 4.12 shows the operating cost per passenger trip for FRED and its peers.

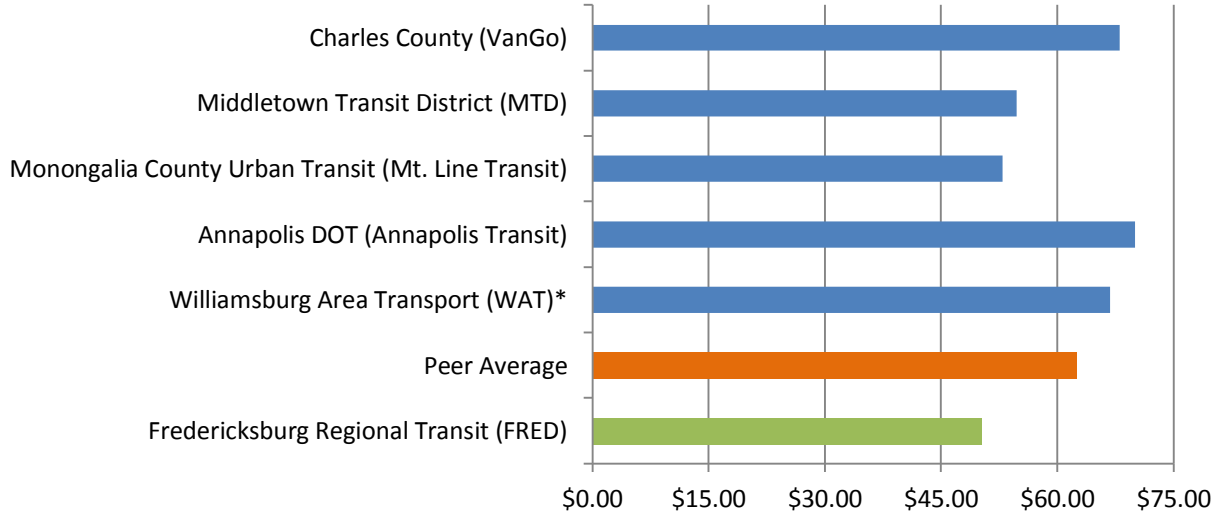
**FIGURE 4.12: OPERATING COST PER PASSENGER TRIP**



### Operating Cost per Revenue Hour

The operating cost per revenue hour ratio measures the cost to operate each hour of service. FRED's operating cost per revenue hour of $50.22 is lower than the peer average of $65.52 (80%). FRED's operating cost per revenue hour is the lowest among the peers, followed by Mt. Line Transit at $52.96 (85%). Annapolis has the highest operating cost per revenue hour at $70.03 or 112 percent of the average. Williamsburg Area Transport is similar, at $66.81 or 107 percent of the peer average. Figure 4.13 shows the operating cost per revenue hour for FRED and the peer systems.

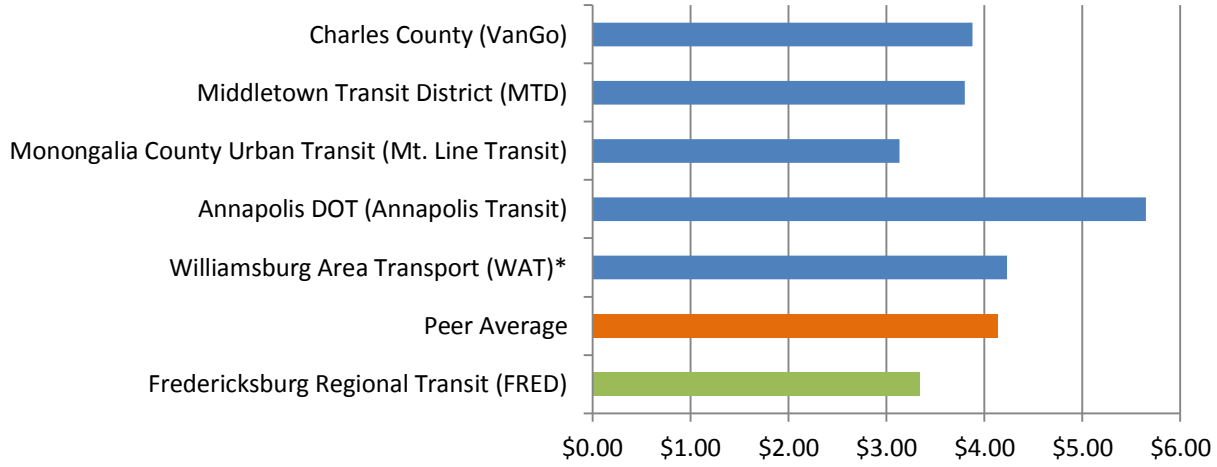
**FIGURE 4.13: OPERATING COST PER REVENUE HOUR**




### Operating Cost per Revenue Mile

Another common cost efficiency measure is operating cost per revenue mile, which compares the operating cost to operate one revenue mile of service across the peers. The peer average is $4.14 per revenue mile. FRED is lower than the peer average at $3.33 per revenue mile (81%). Mt. Line Transit has the lowest operating cost per revenue mile at $3.12 (76%). Annapolis Transit's ratio of operating cost per revenue mile is the highest among the peers at $5.65 (136%). Williamsburg is 102 percent of the peer average, with a cost per revenue mile of $4.23. Figure 4.14 shows the operating cost per revenue mile for FRED and the peer systems.

**FIGURE 4.14: OPERATING COST PER REVENUE MILE**




## 4.5 Revenue Vehicle Maintenance Performance

Revenue vehicle maintenance performance measures include revenue vehicle failures per 1,000 miles and the labor hours for inspection and maintenance per 1,000 miles. Revenue vehicle failures include major mechanical failures that prevent the vehicle from continuing revenue service. This can include failures with brakes, doors, engine cooling systems, steering and front axle, rear axle and suspension, and torque converters, etc. Minor vehicle failures generally do not prevent the vehicle from continuing revenue service, such as malfunctions with fareboxes, wheelchair lifts, and air conditioning systems, etc.

Labor hours for inspection and maintenance per 1,000 miles were not reported to the NTD by FRED or any of the peer systems other than Charles County (VanGO), which reported 4.7 labor hours per 1,000 miles. Therefore, this peer review cannot use this measure for the analysis. It is important to note that maintenance performance indicators are difficult to compare across systems as different variables can impact the results, such as the individual agencies' policies and procedures for taking a vehicle out of service.

### Revenue Vehicle Failures

The total number of revenue vehicle failures for the peer systems are displayed below in Table 4.3. The peer average is 27 vehicle failures; however, the numbers range from five at WAT to 79 at Mt. Line Transit. FRED reported 59 revenue vehicle failures in FY2008.

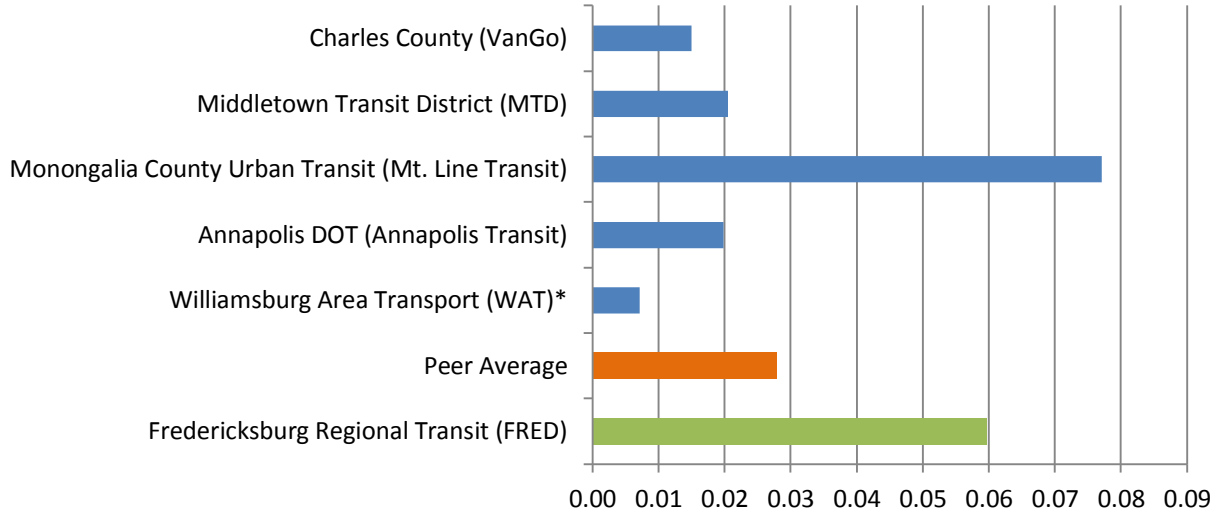
**TABLE 4.3: REVENUE VEHICLE FAILURES**

| Transit Agency | Revenue Vehicle Failures |
|---|---|
| Williamsburg Area Transport (WAT)* | *5* |
| Annapolis DOT (Annapolis Transit) | *16* |
| Monongalia County Urban Transit (Mt. Line Transit) | *79* |
| Middletown Transit District (MTD) | *13* |
| Charles County (VanGO) | *20* |
| **Peer Average** | **27** |
| *FREDericksburg Regional Transit (FRED)* | *59* |

### REVENUE VEHICLE FAILURES PER 1,000 MILES

The ratio of revenue vehicle failures per 1,000 miles helps to balance the scale in order to compare the peer systems. However, vehicle age and model can skew the results. Additionally, reporting methods may vary among agencies. The peer average is .03 revenue vehicle failures per 1,000 miles. FRED reported over twice the peer average at .06 revenue vehicle failures per vehicle (214%). Williamsburg, with a younger fleet, reported .01 vehicle failures per 1,000 miles (26%). However, FRED's average vehicle age is eight years, which would account for the higher out of service/failure rate. Mt. Line Transit had the most failures per 1,000 miles with .08 or 276 percent of the peer average. Figure 4.16 shows the revenue vehicle failures per 1,000 miles as reported in the NTD for FY2008 for FRED and its peers.

**FIGURE 4.15: REVENUE VEHICLE FAILURES PER 1,000 MILES**



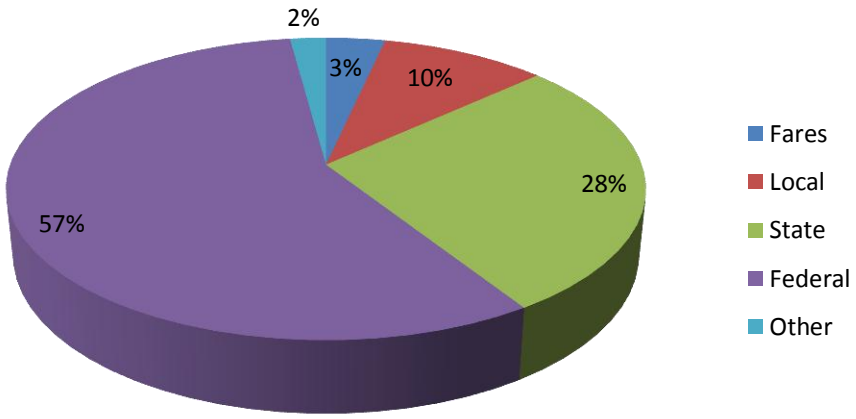
# 5.0 FINANCIAL ANALYSIS

This section highlights the revenue sources used by FRED and its peers to fund operating and maintenance (O&M) and capital costs. It is important to note that the data utilized for the following analysis provides an indication of the range of funding sources used by FRED and the peer transit systems for only FY2008. While levels and sources of funding used for O&M tend to be relatively consistent from year to year, annual capital funding levels and sources can vary significantly – depending on the capital projects and grant sources occurring in a particular year. Additionally, local, state and other funding sources such as university contributions can vary by jurisdiction, making comparison difficult.

## 5.1 FUNDING SOURCES USED FOR O&M

Figure 5.1 shows FRED's key revenue sources for operations and maintenance. Over 57 percent of FRED's funds came from federal sources in FY2008. State funds made up 28 percent, followed by local (10%), fares (3%) and other sources (2%).

**FIGURE 5.1: FRED FUNDING SOURCES FOR O&M**




The total level of O&M funding for FRED and its peer systems are displayed in Figures 5.2 and 5.3. FRED received $3,345,639 in operating funds compared to the peer average of $3,668,085 (91%). Fifty-seven percent of those funds came from federal sources; whereas, the peer average reveals the highest contribution to O&M for the peer systems came from local sources at 33.9 percent. Thus, FRED is heavily dependent on federal and state funding. Although an increase in fares in 2009 should increase percentage of operating funds received from fares, the availability of federal and state operating funds for FRED may change once the 2010 census is tallied. Thus, local sources of funding should expect a higher share of costs. The charts that follow compare the O&M funding by source with FRED and the peer systems.

**FIGURE 5.2: OPERATING AND MAINTENANCE FUNDS BY SOURCE**

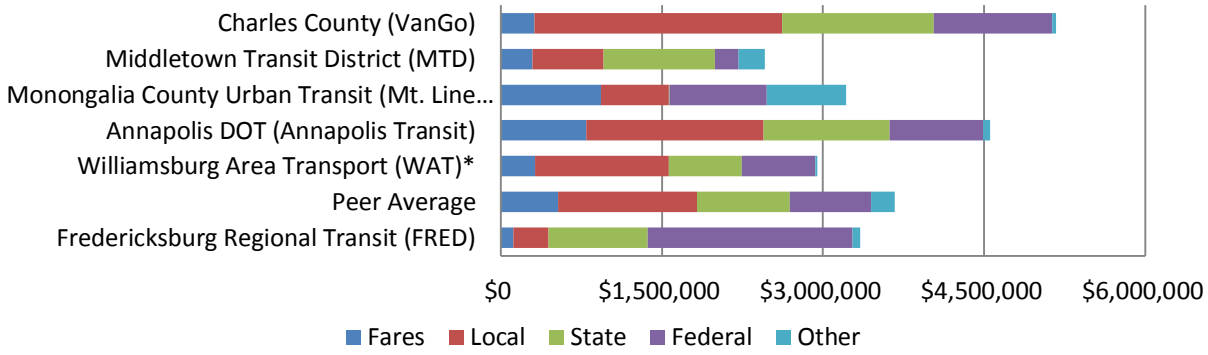
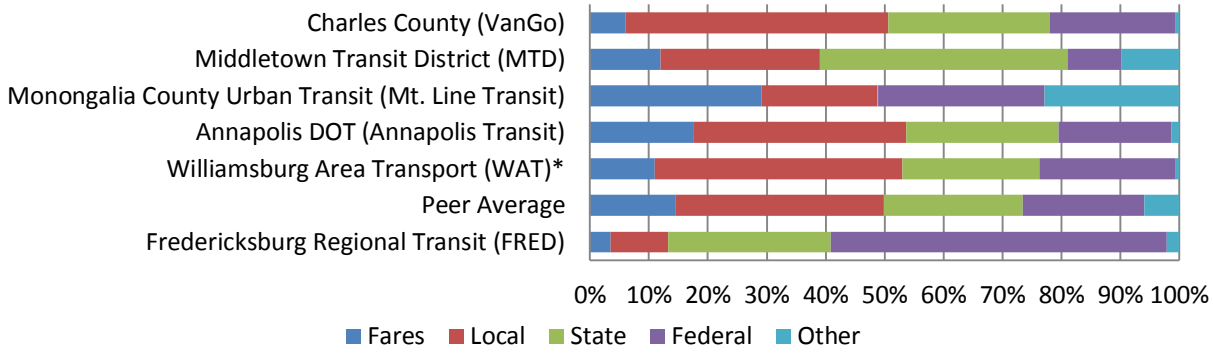



**FIGURE 5.3 – PERCENTAGE OF OPERATING AND MAINTENANCE FUNDING BY SOURCE**




### FIXED ROUTE FAREBOX REVENUE FOR O&M

FRED received $116,662 of fare revenue in FY2008, as shown in Table 5.1. This is 22 percent of the peer average of $531,698. The total fare revenue includes both fixed route service and demand response service combined, when reported.

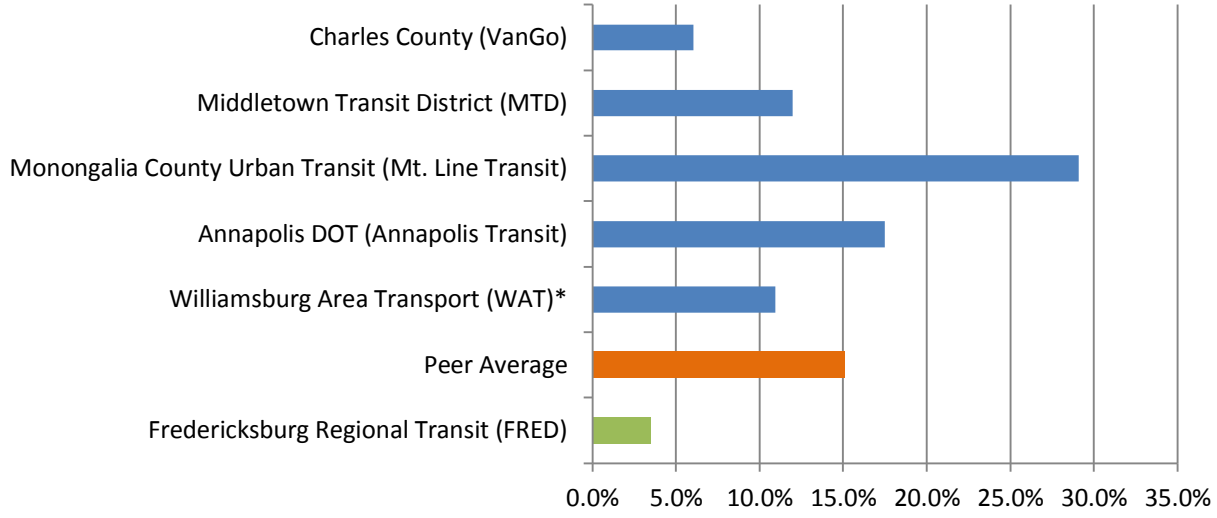
**TABLE 5.1: BUS FARE REVENUE**

| Transit Agency | Fares |
|---|---|
| Williamsburg Area Transport (WAT)* | $322,127 |
| Annapolis DOT (Annapolis Transit) | $796,290 |
| Monongalia County Urban Transit (Mt. Line Transit) | $934,574 |
| Middletown Transit District (MTD) | $293,842 |
| Charles County (VanGO) | $311,655 |
| **Peer Average** | **$531,698** |
| *FREDericksburg Regional Transit (FRED)* | *$116,662* |

The extent to which fares cover O&M costs is referred to as the farebox recovery rate. FRED's fares make up 3.5 percent of their O&M funds, as shown in Figure 5.4. This is lowest among the peers and the peer average of 15.1 percent. Mt. Line Transit has the highest farebox recovery rate at 29.1 percent.

Charles County follows FRED with 6.0 percent of their O&M funds from fares. Recent fare policy changes for FRED should result in a higher farebox recovery rate in the future.

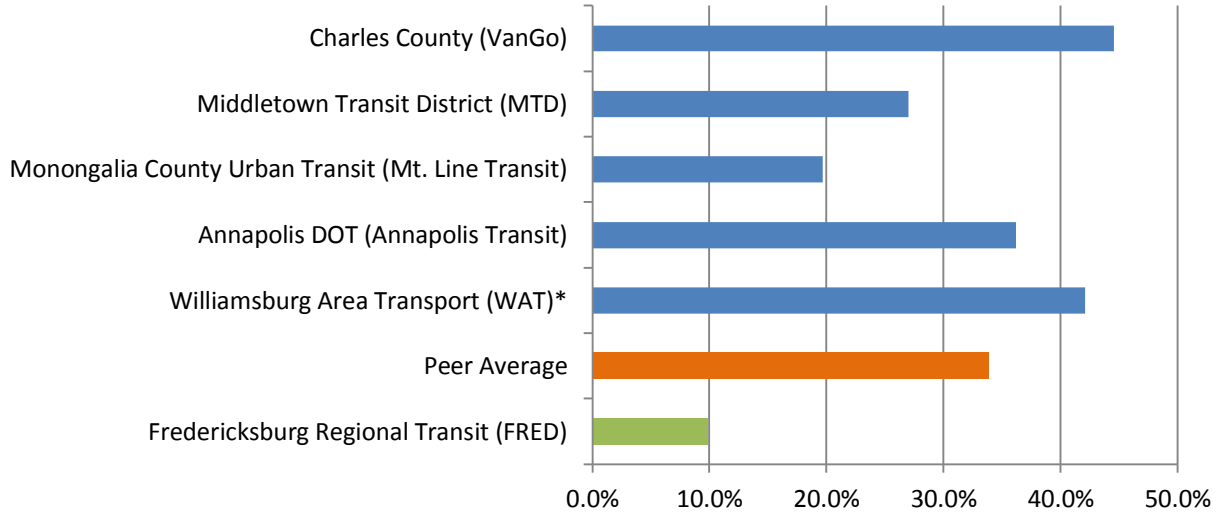
**FIGURE 5.4: BUS O&M FUNDING FROM FARES (FAREBOX RECOVERY RATE)**




## LOCAL FUNDS FOR O&M

FRED receives the lowest percentage of funds from local sources among all of the peers, at 9.8 percent. The peer average is 33.9 percent, as shown in Figure 5.5. Williamsburg receives 42.1 percent of their funds from local sources. This does not include $2,037,190 reported in the NTD for CWF service. Charles County receives the most local funds as a percentage of total funding at 44.6 percent, and Mt. Line Transit receives the fewest at 19.7 percent.

**FIGURE 5.5: LOCAL FUNDS FOR O&M**




Further analysis of the local funding sources when compared with performance measures such as revenue miles, revenue hours, service area population and passenger trips are shown in Tables 5.2

through 5.5. In all scenarios, FRED's local funding is lower than the peer average, and all but one of the peers in the category of passenger trips.

**TABLE 5.2: LOCAL FUNDING PER REVENUE MILE**

| Transit Agency | Local | Revenue Miles | |
|---|---|---|---|
| Williamsburg Area Transport (WAT)* | $1,241,032 | 699,394 | $1.77 |
| Annapolis DOT (Annapolis Transit) | $1,648,013 | 806,664 | $2.04 |
| Monongalia County Urban Transit (Mt. Line Transit) | $633,000 | 1,025,236 | $0.62 |
| Middletown Transit District (MTD) | $663,428 | 633,564 | $1.05 |
| Charles County (VanGO) | $2,305,202 | 1,331,903 | $1.73 |
| **Peer Average** | **$1,298,135** | **899,352** | **$1.44** |
| *FREDericksburg Regional Transit (FRED)* | *$328,449* | *986,916* | *$0.33* |

**TABLE 5.3: LOCAL FUNDING PER REVENUE HOUR**

| Transit Agency | Local | Revenue Hours | |
|---|---|---|---|
| Williamsburg Area Transport (WAT)* | $1,241,032 | 44,322 | $28.00 |
| Annapolis DOT (Annapolis Transit) | $1,648,013 | 65,058 | $25.33 |
| Monongalia County Urban Transit (Mt. Line Transit) | $633,000 | 60,664 | $10.43 |
| Middletown Transit District (MTD) | $663,428 | 43,924 | $15.10 |
| Charles County (VanGO) | $2,305,202 | 75,993 | $30.33 |
| Peer Average | **$1,298,135** | **57,992** | **$21.84** |
| *FREDericksburg Regional Transit (FRED)* | *$328,449* | *65,531* | *$5.01* |

**TABLE 5.4: LOCAL FUNDING PER SERVICE AREA POPULATION**

| Transit Agency | Local | Service Area Pop | |
|---|---|---|---|
| Williamsburg Area Transport (WAT)* | $1,241,032 | 57,000 | $21.77 |
| Annapolis DOT (Annapolis Transit) | $1,648,013 | 90,000 | $18.31 |
| Monongalia County Urban Transit (Mt. Line Transit) | $633,000 | 73,278 | $8.64 |
| Middletown Transit District (MTD) | $663,428 | 90,320 | $7.35 |
| Charles County (VanGO) | $2,305,202 | 120,564 | $19.12 |
| **Peer Average** | **$1,298,135** | **86,232** | **$15.04** |
| *FREDericksburg Regional Transit (FRED)* | *$328,449* | *113,716* | *$2.89* |

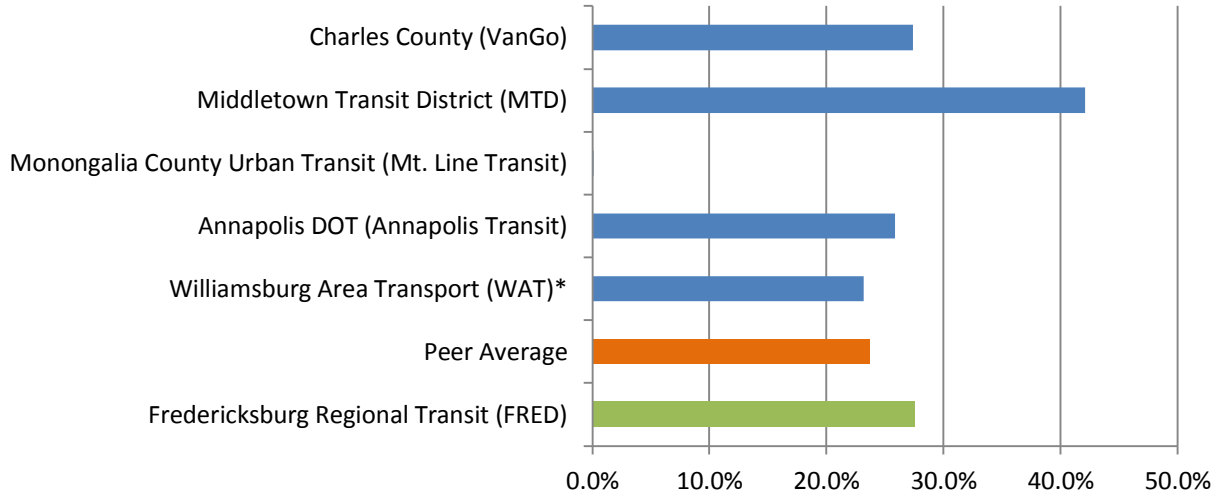
**TABLE 5.5: LOCAL FUNDING PER PASSENGER TRIPS**

| Transit Agency | Local | Passenger Trips | |
|---|---|---|---|
| Williamsburg Area Transport (WAT)* | $1,241,032 | 774,484 | $1.60 |
| Annapolis DOT (Annapolis Transit) | $1,648,013 | 1,486,633 | $1.11 |
| Monongalia County Urban Transit (Mt. Line Transit) | $633,000 | 829,088 | $0.76 |
| Middletown Transit District (MTD) | $663,428 | 444,974 | $1.49 |
| Charles County (VanGO) | $2,305,202 | 510,483 | $4.52 |
| **Peer Average** | **$1,298,135** | **809,132** | **$1.90** |
| *FREDericksburg Regional Transit (FRED)* | *$328,449* | *427,394* | *$0.77* |

### State Funds for O&M

FRED received 27.6 percent of O&M funding from state sources in FY2008, as shown in Figure 5.6. This is higher than the peer average of 23.7 percent. Middletown Transit received the highest percentage of funds from their state at 42.1 percent, and Mt. Line transit has the lowest percentage of state funds for O&M at 0.1 percent. Williamsburg, VanGO and Annapolis all fall within close range to FRED and the peer average.

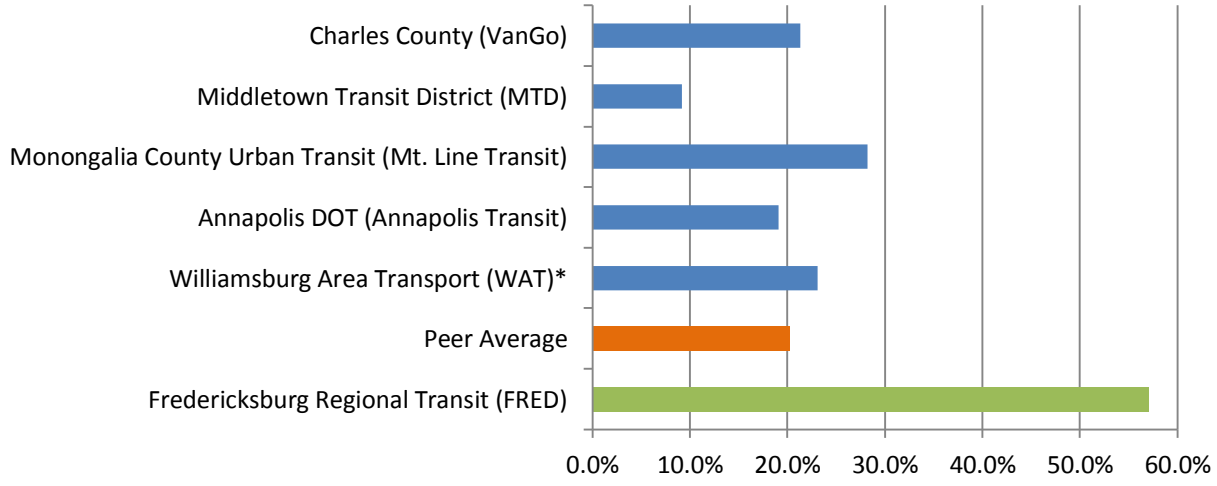
**FIGURE 5.6: STATE FUNDS FOR O&M**




### Federal Funds for O&M

As previously mentioned, FRED received the highest percentage of funds in FY2008 from federal sources at 57 percent. This is higher than the peer average of 20.2 percent. Although FRED has done a good job at securing federal funding; the availability of these funds can vary as grants expire, especially CMAQ grants. Middletown Transit District received the lowest percentage of funds from federal sources at 9.2 percent. The remaining peers fall within the range of 20 to 30 percent, as shown in Figure 5.7.

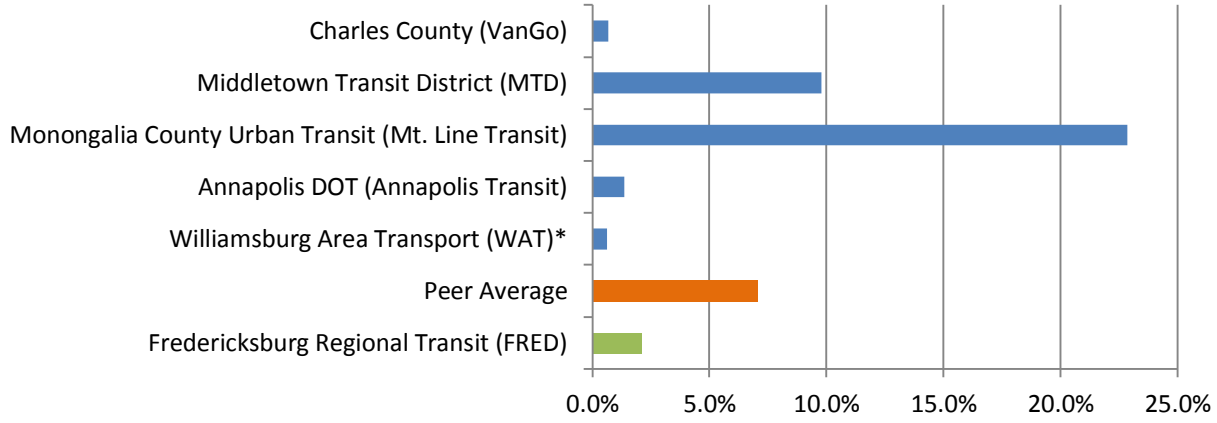
**FIGURE 5.7: FEDERAL FUNDS FOR O&M**



### OTHER FUNDS FOR O&M

Other funding sources can include categories such as payment in lieu of fares or other categories that do not fall under the other categories. This category can vary widely among the peers, as different policies and operating environments can impact this category. On average, the peer systems receive 7.1 percent of their funds from other sources; however, the percentages range from a low of 0.6 percent for Williamsburg Area Transport to a high of 22.9 percent for Mt. Line Transit. FRED received 2.1 percent of its O&M funds from other sources for their operation as a Greyhound agent, as shown in Figure 5.8.

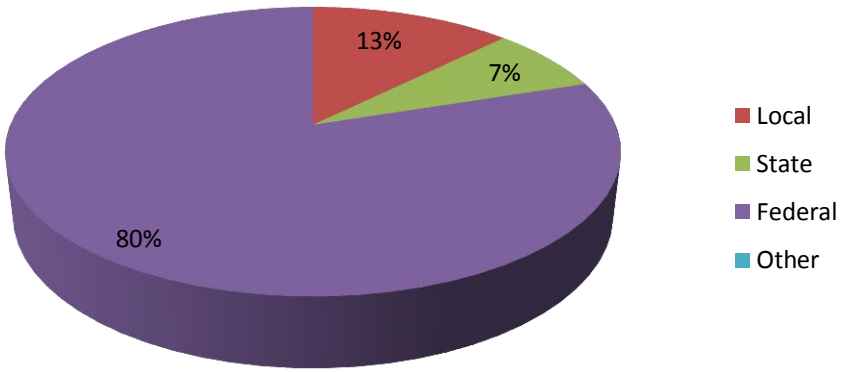
**FIGURE 5.8: OTHER FUNDS FOR O&M**




## 5.2 FUNDING SOURCES USED FOR CAPITAL

While funding levels and sources used for O&M remain relatively consistent from year to year, capital expenditure levels and sources can vary significantly from year to year, depending on the particular projects underway and the grants available. Thus, the information on capital funding levels and sources described below reflects a snapshot for 2008, the most recent year for which data is available from the NTD. In 2008, FRED received 80 percent of its funding from federal sources, seven percent from state sources and 13 percent from local sources, as shown in Figure 5.9.

**FIGURE 5.9: FRED FUNDING SOURCES FOR CAPITAL**



## CAPITAL FUNDING SOURCES

As shown in Figure 5.10, FRED received $3,240,577 in capital funding. Two of the transit agencies did not report capital funds (Annapolis Transit and Middletown Transit), and Mt. Line Transit only reported $50,760. Thus, the peer average does not provide a good comparison. When compared to the Virginia peer, WAT, FRED received 14 percent more capital funds in FY2008. Figure 5.11 shows the percentage of capital funds by source. Again, the peer average does not apply in this scenario; however, FRED and WAT received 80 percent and 81.7 percent of their capital funds from federal sources, respectively. FRED received more local support for the remainder (12.6%); whereas, WAT received more state support (17.3%).

**FIGURE 5.10: CAPITAL FUNDING SOURCES**

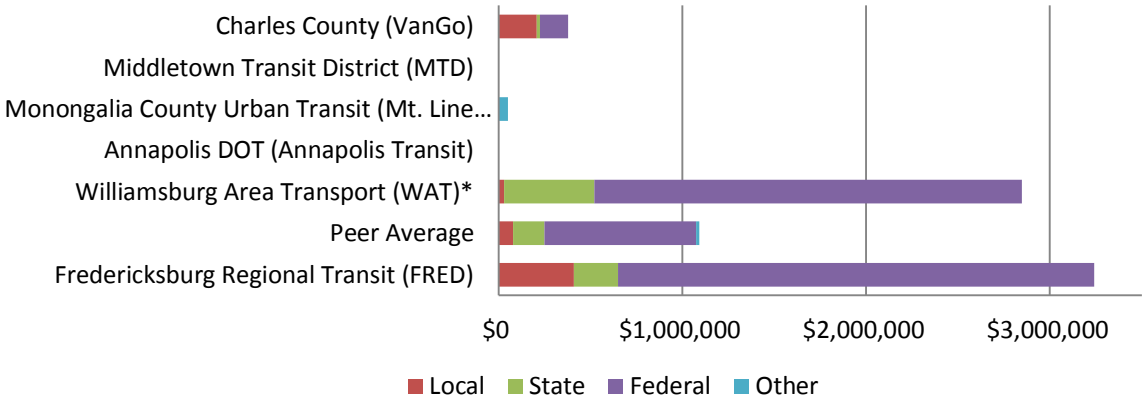
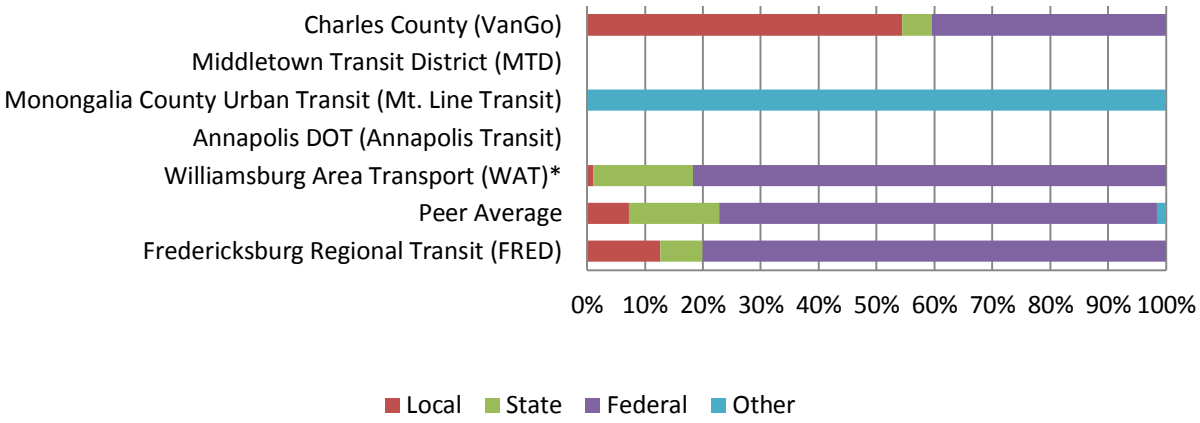



**FIGURE 5.11: PERCENTAGE OF CAPITAL FUNDING BY SOURCE**



# 6.0 KEY FINDINGS

This peer analysis provides performance measures compared across five peer systems. FRED can use these measures to evaluate system strengths and weaknesses and to focus on potential areas for improvement. While it is difficult to factor in the unique nature of Fredericksburg and the peer cities, five peer systems are used that reasonably replicate the FRED service area. These peer systems include Williamsburg Area Transport (WAT), Annapolis Transit (AT), Monongalia County Urban Transit (Mt. Line Transit), Middletown Transit District (MTD), and County Commissioners of Charles County (VanGO). The previous sections provide detailed comparisons for key performance measures of service productivity, as well as sources for O&M and capital funding. The following provides a brief summary of the key findings identified in the peer review.

- *Vehicle Utilization:* FRED is within range of the peer system average for number of vehicles available and vehicles operated for maximum service. FRED's revenue miles and revenue hours per peak vehicle are only slightly higher than the peer average, at 110 percent and 111 percent respectively. As these ratios increase, it indicates a more intense use of the vehicles; however, it can also lead to more wear and tear on the vehicles and thus impact reliability. Based on the peer systems, FRED is efficiently using the vehicles available.
- *Service Supplied:* FRED's revenue hours and revenue miles per service area population and service area square mile are lower than the peer average in all four categories. FRED supplies 84 percent of the peer average in revenue hours per person, 81 percent of the peer average in revenue miles per person, 82 percent of the peer average in revenue hours per square mile, and 84 percent of the peer average in revenue miles per square mile. Because FRED's population and service area are larger than many of the peer systems, there are likely areas of the service area that are underserved based on the peer systems' ratios.
- *Service Productivity:* FRED was lower than the peer average for all three service productivity measures; passenger trips per service area population (37%), passenger trips per revenue hour (46%), and passenger trips per revenue mile (45%).
- *Cost Efficiency:* FRED has a higher cost per passenger trip compared to the peer average (146%); however, FRED's cost per revenue hour and revenue mile is lower than the peer average. This indicates that while FRED may be operating FRED service in a cost efficient manner; FRED's passenger subsidy is much higher than the peer agencies. Although FRED is a cost effective operator, it is a less than cost effective trip provider. This may be due to the large number of hours and miles FRED operates in King George and Caroline Counties, both of which are sparsely populated.
- *Revenue Vehicle Maintenance Performance:* FRED has 214 percent more vehicle failures per 1,000 miles than the peer average; yet, vehicle age, make and maintenance policies can directly impact these results. Additionally, agencies may report maintenance performance differently, thus reducing the reliability of the information available for maintenance. With a large fleet of vehicles with a five-year life span, compared to other vehicles that may have a 10-year life span, the life of FRED's fleet may be shorter than the peer systems.

- *Farebox Revenues:* FRED has the lowest farebox revenue ratio among all of the peer systems at 3.5 percent. The elimination of free transfers and a fare increase in July 2009 should mark a rise in this ratio in the future.
- *Source of O&M Funds:* FRED relies heavily on federal sources for operating funds, with local contributions providing the lowest percentage behind fares at 9.8 percent. New census data in 2010 may impact the level of funding FRED receives, resulting in the need for a larger local share.
- *Source of Capital Funds:* Eighty percent of FRED's capital funds came from federal sources and 12.6 percent came from local sources. As grants expire and FRED service expands, capital funding may become a challenge in the future.

# APPENDIX C: FRED ON BOARD SURVEY FINDING

This appendix presents the methodology and results for an onboard survey of FREDericksburg Regional Transit fixed route, VRE feeder and FREDExpress service conducted in March 2010 to be used in the service evaluation process of the TDP. The survey includes trip purpose, origin and destination questions and rider characteristics. This memorandum presents the methodology and implementation of the survey, as well as the results.

## SURVEY METHODOLOGY AND IMPLEMENTATION

### SURVEY SCHEDULE

The FRED onboard survey schedule was designed to cover all of the routes in the system. A schedule was developed that covered a one week period from March 15 through March 20, 2010. A training class was held on Monday, March 15, and surveyors rode FRED buses from Tuesday, March 16 through Saturday, March 20, 2010. Surveyors rode buses from the start of service until the end of service, approximately 7:30 a.m. until 8:30 p.m. (depending on the route) for fixed route service, during the morning hours for VRE feeder service, and on Saturday from 8:30 a.m. until 8:30 p.m. on the FREDExpress routes. Tuesday and Wednesday assignments covered routes out of FRED Central, with morning assignments scheduled on Tuesday and afternoon assignment scheduled on Wednesday. Thursday surveys included VRE routes and fixed routes serving Lee's Hill Center and the Spotsylvania Ukrops stop. Friday surveys originated from the VRE train station and Stafford Marketplace. Surveyors for the Spotsylvania VRE feeder service stood at the Gordon Road Park & Ride and Ukrops Park & Ride to administer the survey to passengers riding the VRE feeder routes during the a.m. trips. It is assumed that the same passengers make the return trip in the afternoon, and thus, the afternoon trips for the VRE feeder service were not surveyed.

All of the routes were surveyed from the beginning to end of service, with the exception of a few routes. Due to scheduling and logistics, Route C1 was not surveyed from 7:15 a.m. until 7:45 a.m. from FRED Central to the Caroline County Community Service Center and between the hours of 2:00 p.m. until 3:00 p.m. Route C2 had one trip surveyed to Port Royal on Wednesday (2:00 p.m. – 3:00 p.m.) and all trips to Dawn surveyed on Friday. Additionally, Route C2 was not surveyed from 5:55 p.m. to 6:30 p.m. from the Community Service Center to FRED Central. Route F1 had one missed trip from 1:00 p.m. until 2:00 p.m. and Route D2 was not surveyed from 5:50 p.m. until 6:30 p.m. from Stafford Marketplace to the Stafford County Courthouse. Finally, Route M1 was not surveyed after 2:30 p.m. Table 1 shows the routes surveyed and total survey hours.

**Table 1: Survey Hours and Revenue Hours by Route**

| Route | Survey Hrs | Revenue Hours | % of Rev. Hrs |
|---|---|---|---|
| **F1** | 10 | 11 | 91% |
| **F2** | 13 | 13 | 100% |
| **F3** | 13 | 13 | 100% |
| **F4** | 22 | 22 | 100% |
| **F5** | 12 | 12 | 100% |
| **C1/C2** | 14.4 | 13.9 | 100% |
| **D1** | 10 | 10 | 100% |
| **D2** | 12 | 12 | 100% |
| **D3** | 10 | 11 | 91% |
| **D4** | 7 | 7.67 | 91% |
| **D5** | 12 | 12 | 100% |
| **D6** | 4.5 | 4.5 | 100% |
| **K1** | 12 | 12 | 100% |
| **K2** | 4 | 4 | 100% |
| **S1** | 20 | 20 | 100% |
| **S2** | 12 | 12 | 100% |
| **S3** | 12 | 12 | 100% |
| **VF1** | 2.7 | 2.7 | 100% |
| **VF2** | 2.7 | 2.7 | 100% |
| **VS1** | 2.5 | 2.5 | 100% |
| **VS1** | 2.5 | 2.5 | 100% |
| **M1** | 6 | 13 | 46% |
| **M2** | 12 | 16 | 75% |
| ***Total*** | *228.3* | *241.5* | *95%* |

### Survey Instrument

The survey instrument was created with input from FRED staff based on previous surveys conducted in the past to ensure consistency of data over time. The final survey instrument is a two-sided document printed on card stock paper, with questions written in English on one side and Spanish on the other. Each survey form has a unique serial number between 100001 and 102000. A staff-use only box includes a space for surveyors to record the route number and time the survey was conducted. Section I on the questionnaire, Q 1-6, includes questions about the one-way trip being surveyed, such as origin and destination locations, bus transfer information, mode of access, and how often the passenger rides FRED. The second set of questions, Q 7-13, asks demographic related questions, including the number of vehicles available, age, if the passenger has a valid driver's license, gender, employment status, household income and if English is their primary language. Most questions include check box responses, with origin and destination information providing space for open answers. Section 3 provides an area for respondents to write input on how FRED service can be improved.

### Survey Implementation

The firm Taskforce Staffing was retained to recruit surveyors to administer surveys on FRED buses. A training session was held on Monday, March 15th from 1:00 p.m. to 3:00 p.m. Approximately 14 surveyors were recruited for this survey effort.

As previously noted, the survey was conducted on Tuesday, March 16 through Saturday, March 20, 2010. Most routes were accessed from FRED Central. Additional routes were accessed from Lee's Hill Center, Stafford Marketplace, VRE Train Station, Plank Road Ukrops and Caroline County Community Services Center. Surveys on VRE Feeder Routes (VS1 & VS2) were conducted between 4:30 a.m. and 7:20 a.m. at Gordon Road Park and Ride and Ukrops Park and Ride. Passengers on VRE feeder routes were given the option to complete the form and return it to the surveyor, or return the survey to the bus driver.

Surveyors were given their scheduled report and end times prior to the survey date. Surveyors signed in with a supervisor prior to their assignment and were given a packet that included the assigned route, survey times, the location of the bus stop where surveyors board and alight the bus, blank survey forms, pencils, and a digital watch. Surveyors wore a badge that gave them boarding access to their assigned route and identified them as surveyors. Additionally, FRED was notified of the days routes were scheduled to be surveyed. Surveyors were instructed to record the route number and the time the survey was handed out. Surveyors returned all completed surveys and supplies daily at the end of the assignment. A supervisor reviewed each assignment to look for obvious errors.

**FIGURE 1: FRED ON BOARD SURVEY INSTRUMENT**

STAFF USE ONLY
Route #:_____ Time: _____ am/pm

SERIAL #:

FRED is evaluating existing and future transit service needs. This survey will be used to determine the typical travel patterns of FRED's riders. Please take a few moments to answer the questions below about the one-way trip in which you received this survey. Thank You!

***I. Tell us About Your Trip:***

***EXAMPLE OF A ONE-WAY TRIP***

**1a. Where did you START this One-Way trip? (Check one)**

- ☐ a Work
- ☐ b Home/Dorm
- ☐ c School (K-12)
- ☐ d Shopping
- ☐ e Medical or Dental
- ☐ f Social or Recreation
- ☐ g College/University(student)
- ☐ h Social Services
- ☐ i Other_____

**1b. Which is located at: (STARTING PLACE in Question 1a)**

_____
Street Address, Nearby intersection, or Nearest Building/Landmark

_____
City Zip (if known)

**2a. Where will you END this One-Way Trip ? (Check one)**

- ☐ a Work
- ☐ b Home/Dorm
- ☐ c School(K-12)
- ☐ d Shopping
- ☐ e Medical or Dental
- ☐ f Social or Recreation
- ☐ g College/University(student)
- ☐ h Social Services
- ☐ i Other_____

**2b. Which is located at: (ENDING PLACE in Question 2a)**

_____
Street Address, Nearby Intersection or Nearest Building/Landmark

_____
City Zip (if known)

**3a. Did you transfer from ANOTHER bus on THIS One-Way trip to the bus you are riding NOW?**
☐ No ☐ Yes, I transferred from Route_____

**3b. How did you get from your STARTING place to the first bus in this One-Way Trip?**
☐ a Walked ____ Blocks ☐ c Drove/Rode Car & Parked
☐ b Bicycle ☐ d Dropped off by someone
☐ e Other _____

**4a. Will you transfer to ANOTHER bus on THIS One Way trip to where you are going NOW?**
☐ No ☐ Yes, I will transfer to Route_____

**4b. How will you get to your ENDING place from the last bus in this One-Way Trip?**
☐ a Walk _____ Blocks ☐ c Drive/Ride in Parked Car
☐ b Bicycle ☐ d Picked up by someone
☐ e Other _____

**5. If you transferred from another bus on this trip, how long did you wait at the bus stop?**
_____ Minutes

**6. How OFTEN do you ride FRED service?**
☐ a Less than Once a Month
☐ b Once or Twice a Month
☐ c 1 Day a Week
☐ d 2-3 Days a Week
☐ e 4 or More Days a Week

***II. Tell us About Yourself:***

**7. How many vehicles (cars, trucks, motorcycles) are available in the household where you live?**
☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 or more

**8. Do you have a valid driver's license?** ☐ Yes ☐ No

**9. What is your Gender?** ☐ Male ☐ Female

**10. What is your Employment/Student Status?**
☐ a Employed Full-Time ☐ b Employed Part Time
☐ c Not Employed ☐ d Retired
☐ e Student-K-12 ☐ f Student-College/University

**11. What is your age?**
☐ a Under 18 ☐ b 19-24 ☐ c 25-39
☐ d 40-59 ☐ e 60 or Over

**12. What is your total annual household income level?**
☐ a $19,999 or less ☐ b $20,000 - $39,999
☐ c $40,000 - $59,999 ☐ d $60,000 - $79,999
☐ e $80,000 or more

**13. Is your first language a language other than English?**
☐No ☐ Yes, my primary language is:_____

***III. Tell us how we can make FRED better:***

_____

_____

## Survey Processing

A total of 982 surveys were returned and entered into a master Excel database. Survey forms that lacked any coherent information were discarded. Survey totals include 854 from FRED fixed route service, 81 from FREDExpress Routes M1 and M2, and 47 from the VRE feeder service. Based on the daily route level ridership totals during the week of the survey provided by FRED, approximately 2,224 passengers were on surveyed buses. Thus, the overall response rate for the survey was 44 percent.

The following Figure 2 shows the total number of responses by route. Figure 3 shows the survey response rate by route based on the daily ridership counts during the week of the survey. Route F5 had the lowest response rate, with only 19 percent of the riders responding to the surveys. Surveyors commented that many of the passengers filled out a survey on a previous route and would not fill out another.

**Figure 2: Total Surveys, By Route**

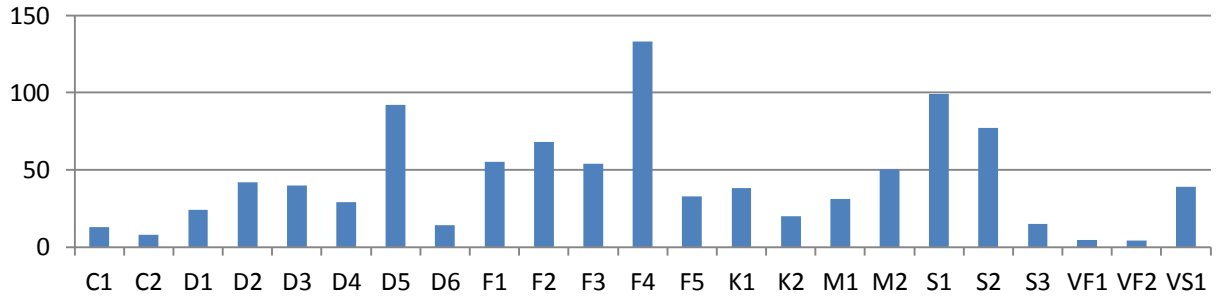
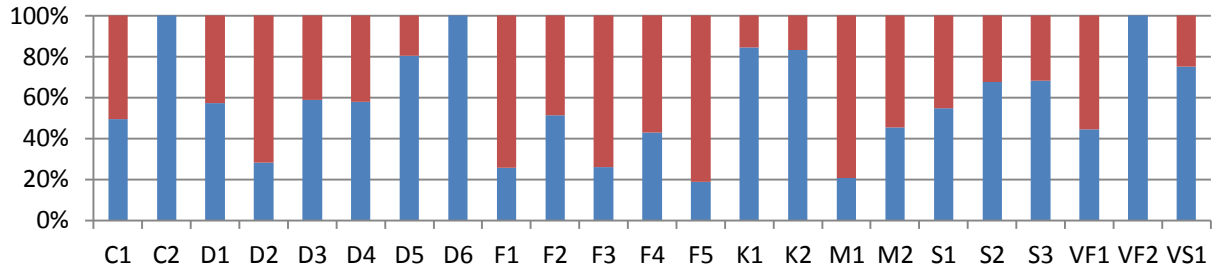



**Figure 3: Survey Response Rate, by Route**




Additionally, time of day information was gathered for each survey collected. Figure 4 shows the total number of fixed route surveys returned by hour. This is followed by the hourly survey response rate for the FREDExpress Routes M1 and M2 in Figure 5. As previously mentioned, the VRE routes were only surveyed during the a.m. hours.

**Figure 4: FRED Fixed Route Total Responses, by Hour**

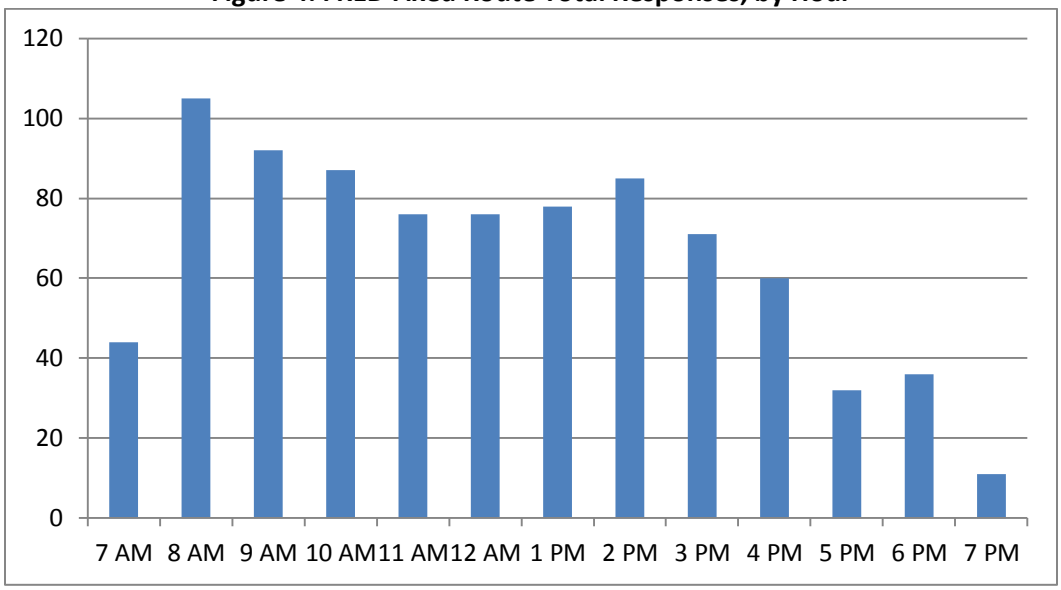
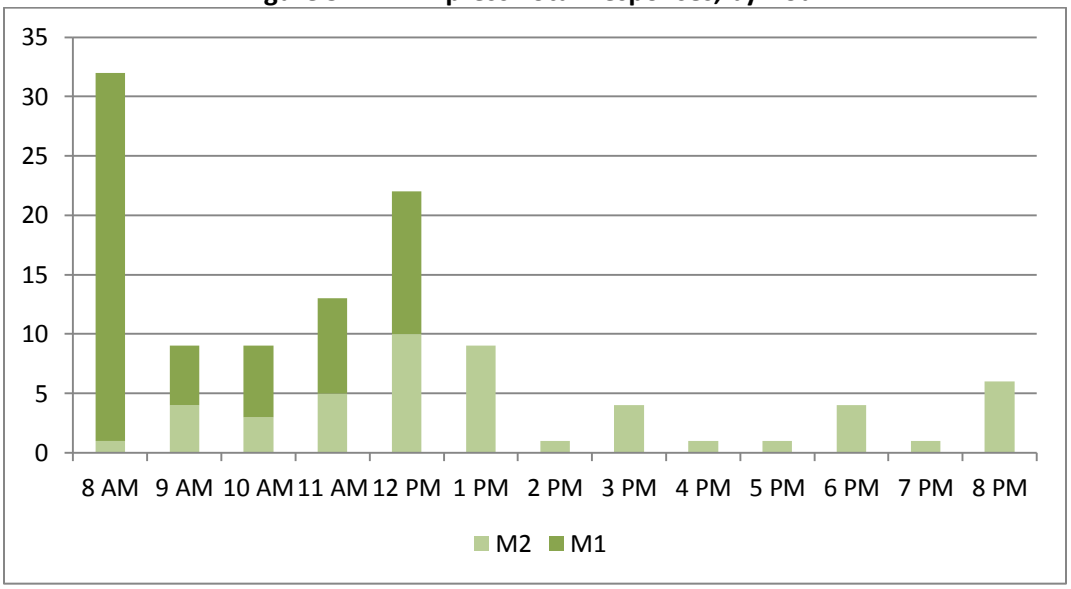



**Figure 5: FREDExpress Total Responses, by Hour**




## Expansion Factors

In order to get a total representation of system ridership from survey results, an expansion factor is applied to each route. The expansion process is designed to eliminate biases that may occur as a result of uneven response rates. Although the survey implementation described in the previous section included an even distribution of surveys by route and service hours, response rates varied. Various factors may account for the variation, such as riders on one particular route being more likely to fill out a survey than riders on another route, or riders during morning hours may be more willing to fill out a survey than riders during afternoon hours. The survey expansion process factors survey results to represent total system ridership to reduce the survey response rate biases noted above.

To develop the expansion factors for each route, the daily ridership is divided by the number of surveys. Average daily ridership is calculated based on the dates the routes were surveyed. If a route was surveyed for two or more days, the average ridership is calculated for all of the dates the route was surveyed. Ridership data compiled by FRED during the survey dates is used to develop the survey expansion. Ridership data includes route level ridership by day and time period (AM and PM). Thus, factors were developed for the raw survey data based on surveys collected in the AM and PM, as well as daily for those routes that did not have AM and PM ridership data. VRE routes were only surveyed during the a.m. hours. Therefore, the expansion factor for VRE routes only uses the AM period ridership data. The factors are listed in Table 2.

**Table 2: Expansion Factors**

| | Total Survey Responses | | | Average Daily Ridership | | | Factors | | |
|---|---|---|---|---|---|---|---|---|---|
| Route | AM | PM | Total | AM | PM | Total | AM Period | PM Period | Daily Factor |
| **C1** | 6 | 7 | 13 | 15 | 12 | 26 | 2.44 | 1.67 | 2.03 |
| **C2** | n/a | 8 | 8 | 1 | 5 | 8 | 1.00 | 1.00 | 1.00 |
| **D1** | 7 | 17 | 24 | 24 | 18 | 42 | 3.43 | 1.06 | 1.75 |
| **D2** | 19 | 23 | 42 | 92 | 58 | 150 | 4.84 | 2.50 | 3.56 |
| **D3** | 24 | 16 | 40 | 35 | 33 | 68 | 1.46 | 2.06 | 1.70 |
| **D4** | 16 | 13 | 29 | 28 | 22 | 50 | 1.75 | 1.69 | 1.72 |
| **D5** | 42 | 50 | 92 | 63 | 52 | 115 | 1.50 | 1.03 | 1.24 |
| **D6** | 4 | 10 | 14 | 5 | 9 | 14 | 1.25 | 0.90 | 1.00 |
| **F1** | 35 | 20 | 55 | 98 | 117 | 215 | 2.80 | 5.85 | 3.91 |
| **F2** | 37 | 31 | 68 | 76 | 57 | 133 | 2.04 | 1.84 | 1.95 |
| **F3** | 19 | 35 | 54 | 110 | 98 | 208 | 5.76 | 2.80 | 3.84 |
| **F4** | 65 | 68 | 133 | 156 | 155 | 311 | 2.39 | 2.28 | 2.33 |
| **F5** | 6 | 27 | 33 | 74 | 101 | 175 | 12.25 | 3.74 | 5.29 |
| **K1** | 16 | 22 | 38 | 19 | 27 | 45 | 1.16 | 1.20 | 1.18 |
| **K2** | 8 | 12 | 20 | 15 | 9 | 24 | 1.88 | 0.75 | 1.20 |
| **M1** | 31 | | 31 | n/a | n/a | 151 | 4.87 | 4.87 | 4.87 |
| **M2** | 13 | 37 | 50 | n/a | n/a | 110 | 2.20 | 2.20 | 2.20 |
| **S1** | 45 | 54 | 99 | 66 | 115 | 181 | 1.47 | 2.13 | 1.83 |
| **S2** | 47 | 30 | 77 | 76 | 38 | 114 | 1.62 | 1.27 | 1.48 |
| **S3** | 8 | 7 | 15 | 15 | 7 | 22 | 1.88 | 1.00 | 1.47 |
| **VF1** | 4 | n/a | 4 | 9 | n/a | 9 | 2.25 | n/a | 2.25 |
| **VF2** | 4 | n/a | 4 | 4 | n/a | 4 | 1.00 | n/a | 1.00 |
| **VS1** | 39 | | 39 | 52 | | 52 | 1.33 | n/a | 1.33 |
| **Total** | **495** | **487** | **982** | 1030 | 931 | 2224 | | | |

Table 3 shows the total number of surveys received as well as the expanded survey results by route.

**Table 3: Total Survey Responses and Expanded Total Responses**

| Route | Total Surveys | % of Total | Factor Results | % of Total |
|---|---|---|---|---|
| **C1** | 13 | 1.3% | 26 | 1.2% |
| **C2** | 8 | 0.8% | 8 | 0.4% |
| **D1** | 24 | 2.4% | 42 | 1.9% |
| **D2** | 42 | 4.3% | 150 | 6.7% |
| **D3** | 40 | 4.1% | 68 | 3.1% |
| **D4** | 29 | 3.0% | 50 | 2.2% |
| **D5** | 92 | 9.4% | 115 | 5.1% |
| **D6** | 14 | 1.4% | 14 | 0.6% |
| **F1** | 55 | 5.6% | 215 | 9.7% |
| **F2** | 68 | 6.9% | 133 | 6.0% |
| **F3** | 54 | 5.5% | 208 | 9.3% |
| **F4** | 133 | 13.5% | 311 | 14.0% |
| **F5** | 33 | 3.4% | 175 | 7.8% |
| **K1** | 38 | 3.9% | 45 | 2.0% |
| **K2** | 20 | 2.0% | 24 | 1.1% |
| **M1** | 31 | 3.2% | 151 | 6.8% |
| **M2** | 50 | 5.1% | 110 | 4.9% |
| **S1** | 99 | 10.1% | 181 | 8.1% |
| **S2** | 77 | 7.8% | 114 | 5.1% |
| **S3** | 15 | 1.5% | 22 | 1.0% |
| **VF1** | 4 | 0.4% | 9 | 0.4% |
| **VF2** | 4 | 0.4% | 4 | 0.2% |
| **VS1** | 39 | 4.0% | 52 | 2.3% |
| **Grand Total** | **982** | **100.0%** | **2,224** | **100.0%** |

Survey responses by time period include 495 survey forms in the AM period (50.4%), and 487 in the PM period (49.6%), as shown in Table 4. For most routes, the AM period only includes approximately four to five hours, whereas the afternoon routes can be as long as eight hours. Although the AM and PM split appears to be even, the same number of surveys was collected in the morning hours over a shorter period of time as the afternoon hours. Based on the expanded results, the AM period has 54.3 percent of the total ridership and the PM period has 45.7 percent.

**Table 4: AM and PM Survey Totals**

| Route Type | Time Period | Total Surveys | % of Total | Expanded Results | % of Total |
|---|---|---|---|---|---|
| **Fixed** | AM | 404 | 47% | 964 | 51% |
| | PM | 450 | 53% | 934 | 49% |
| ***Fixed Total*** | | ***854*** | ***87%*** | ***1,898*** | ***43%*** |
| **FREDEX** | AM | 44 | 54% | 180 | 69% |
| | PM | 37 | 46% | 81 | 31% |
| ***FREDEX Total*** | | ***81*** | ***8%*** | ***261*** | ***6%*** |
| ***VRE Feeder*** | *AM* | *47* | *5%* | *65* | *1%* |
| ***Grand Total*** | | ***982*** | | ***2,224*** | |

Surveys completed in Spanish were identified in the master database. Thirty-eight of the survey forms returned were completed on the Spanish side, which is 3.9 percent of the survey total. Table 5 shows the number of Spanish forms returned by route as well as the percentage of Spanish surveys by individual route response and total survey responses. Further detail on the expansion results are in the next section.

**Table 5: Surveys Completed in Spanish**

| Route | Spanish | % of Spanish | % of Route |
|---|---|---|---|
| **D2** | 3 | 7.9% | 7.1% |
| **D3** | 3 | 7.9% | 7.5% |
| **D4** | 3 | 7.9% | 10.3% |
| **D5** | 4 | 10.5% | 4.3% |
| **F1** | 3 | 7.9% | 5.5% |
| **F3** | 2 | 5.3% | 3.7% |
| **F4** | 6 | 15.8% | 4.5% |
| **M1** | 3 | 7.9% | 9.7% |
| **S1** | 6 | 15.8% | 6.1% |
| **S2** | 4 | 10.5% | 5.2% |
| **S3** | 1 | 2.6% | 6.7% |
| **Total** | 38 | 100.0% | 5.7% |

## GEOCODING PROCESS

The boarding, alighting, origin and destination addresses included in each record were geocoded using the online geocoding website www.batchgeocode.com. The geocoding process required significant manual work including rationalizing addresses and converting landmark information to geocodable addresses. The geocoding process inserted the appropriate latitudes and longitudes into each record. Geocoded points that were obtained from the website www.batchgeocode.com were imported into the software program GoogleEarth to visually verify if the geocoded location was indeed an appropriate match.

After the initial geocoding process, the survey database had 820 records with origins, 775 records with destination information; and 758 records with both an origin and destination. In a second round of screening, origins and destinations that did not provide enough information to identify an exact location (such as records on long roads with no cross street or street number) were removed from the total. Additionally, records that provided the same origin and destination were removed from the analysis.

Of the 982 surveys that were entered into the survey database, geocodable locations were obtained for the following number or records:

- Records with Unique Trip Origin Locations 782 records (80% of total)
- Records with Unique Trip Destination Locations – 735 records (75%)
- Records with both Unique Trip Origin & Destination Locations - 663 (68%)

An analysis of total boardings and alightings by TAZ is included in Figure 6. As expected, the highest level of activity occurred around FRED transfer locations and along route corridors. Records with unique trip origins and destinations were plotted on the system maps and are presented on the following pages in Figures 7 through 11. This is followed by Figures 12 through 19, which include the same maps overlayed with the individual trips by record for each route type: City of Fredericksburg, Spotsylvania County, Stafford County, King George County and Caroline County. VRE Feeder trips and FREDExpress trips are also included.

FIGURE 6: RIDERSHIP ACTIVITY BY TAZ

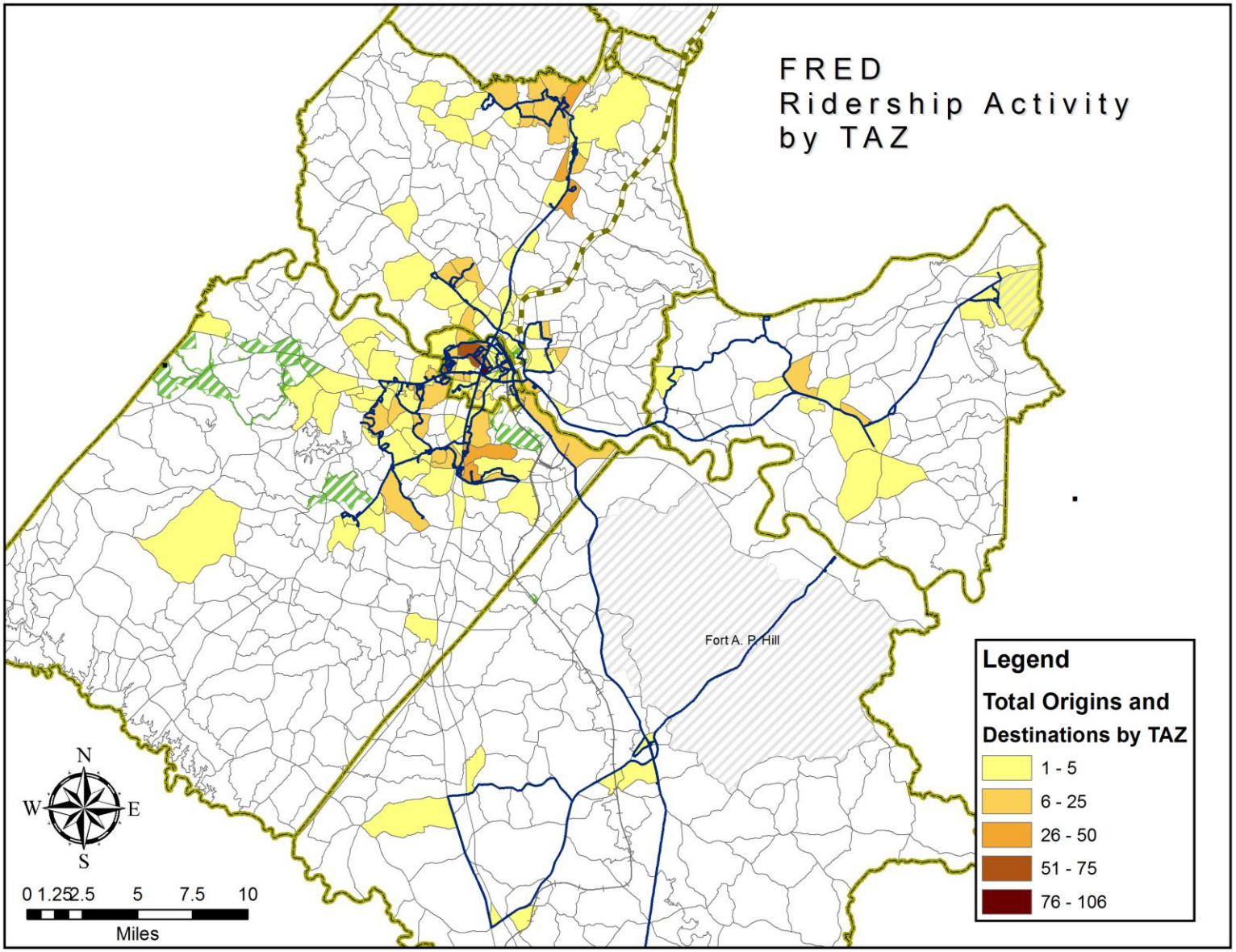


FIGURE 7: SPOTYSLVANIA COUNTY ORIGINS AND DESTINATIONS

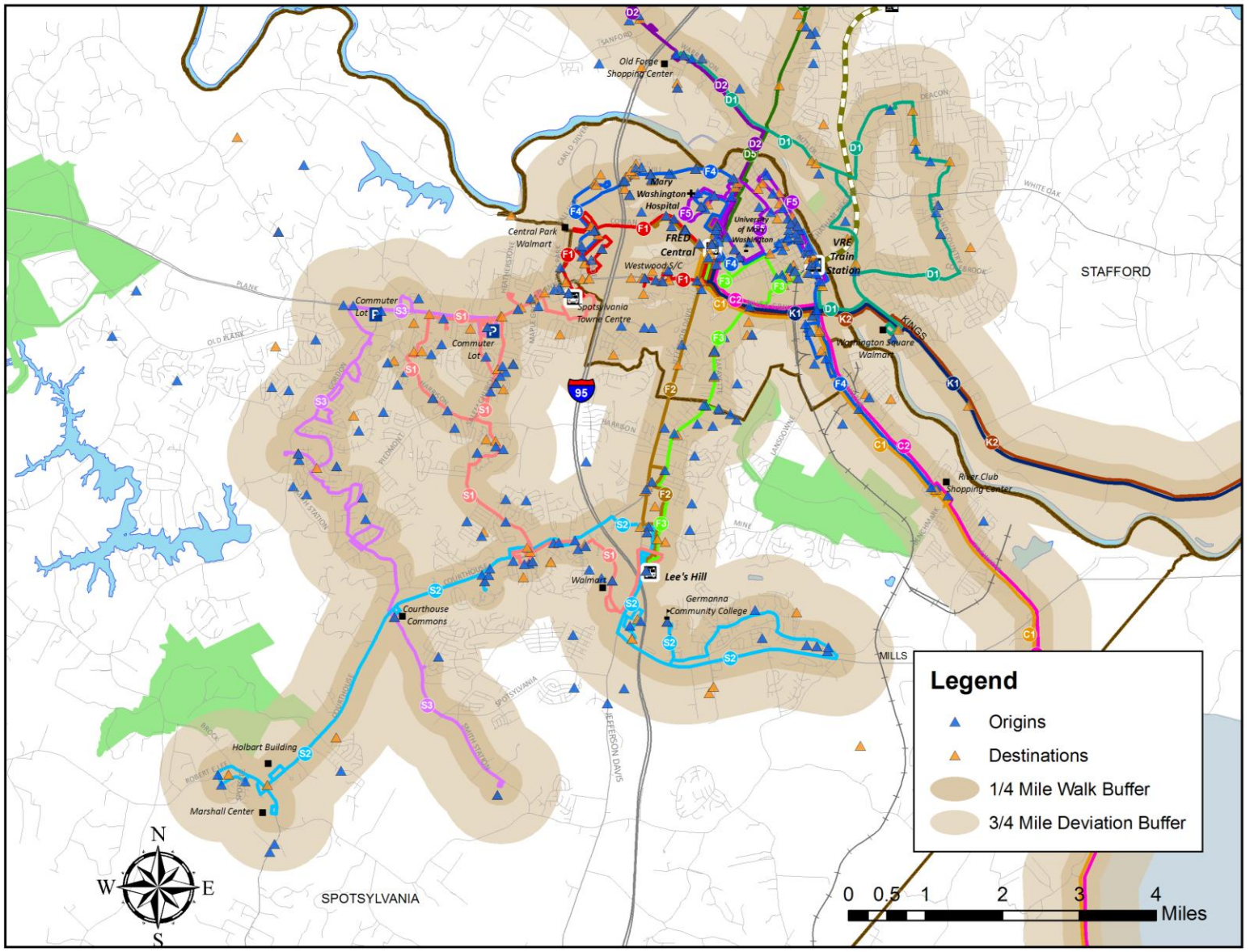


**FIGURE 8: KING GEORGE COUNTY ORIGINS AND DESTINATIONS**

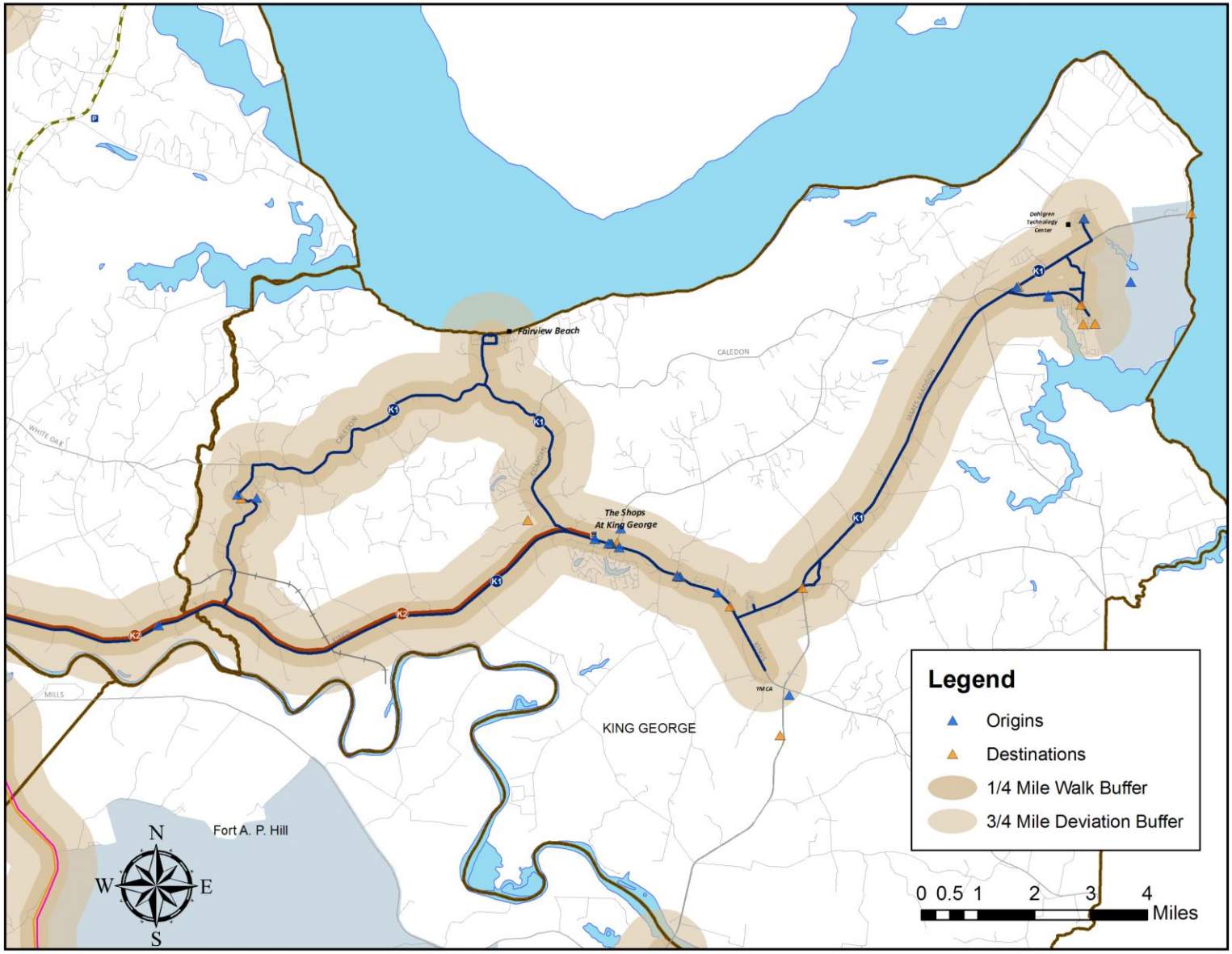


FIGURE 9: SOUTHERN STAFFORD COUNTY ORIGINS AND DESTINATIONS

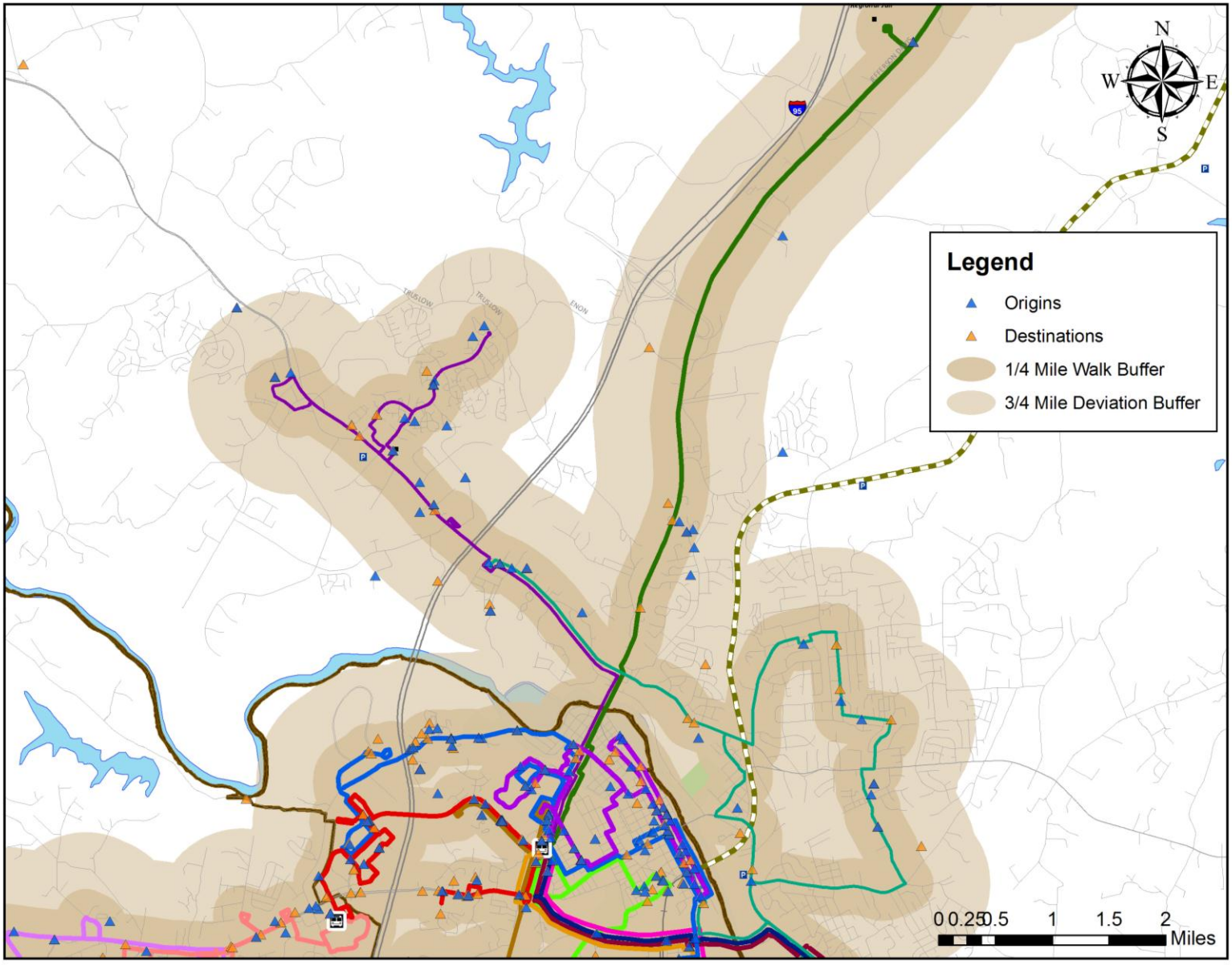


**FIGURE 10: STAFFORD COUNTY ORIGINS AND DESTINATIONS**

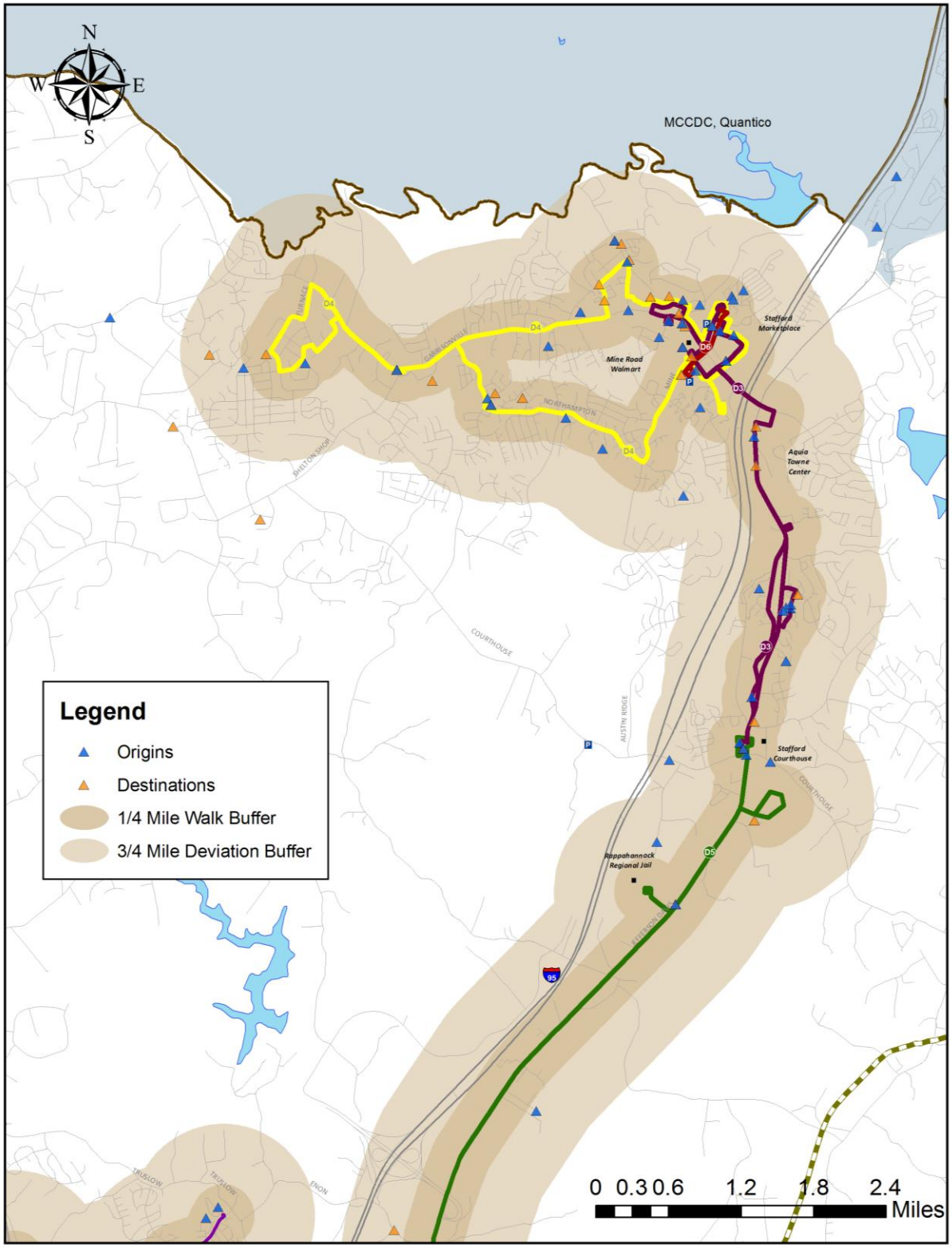


**FIGURE 11: CAROLINE COUNTY ORIGINS AND DESTINATIONS**

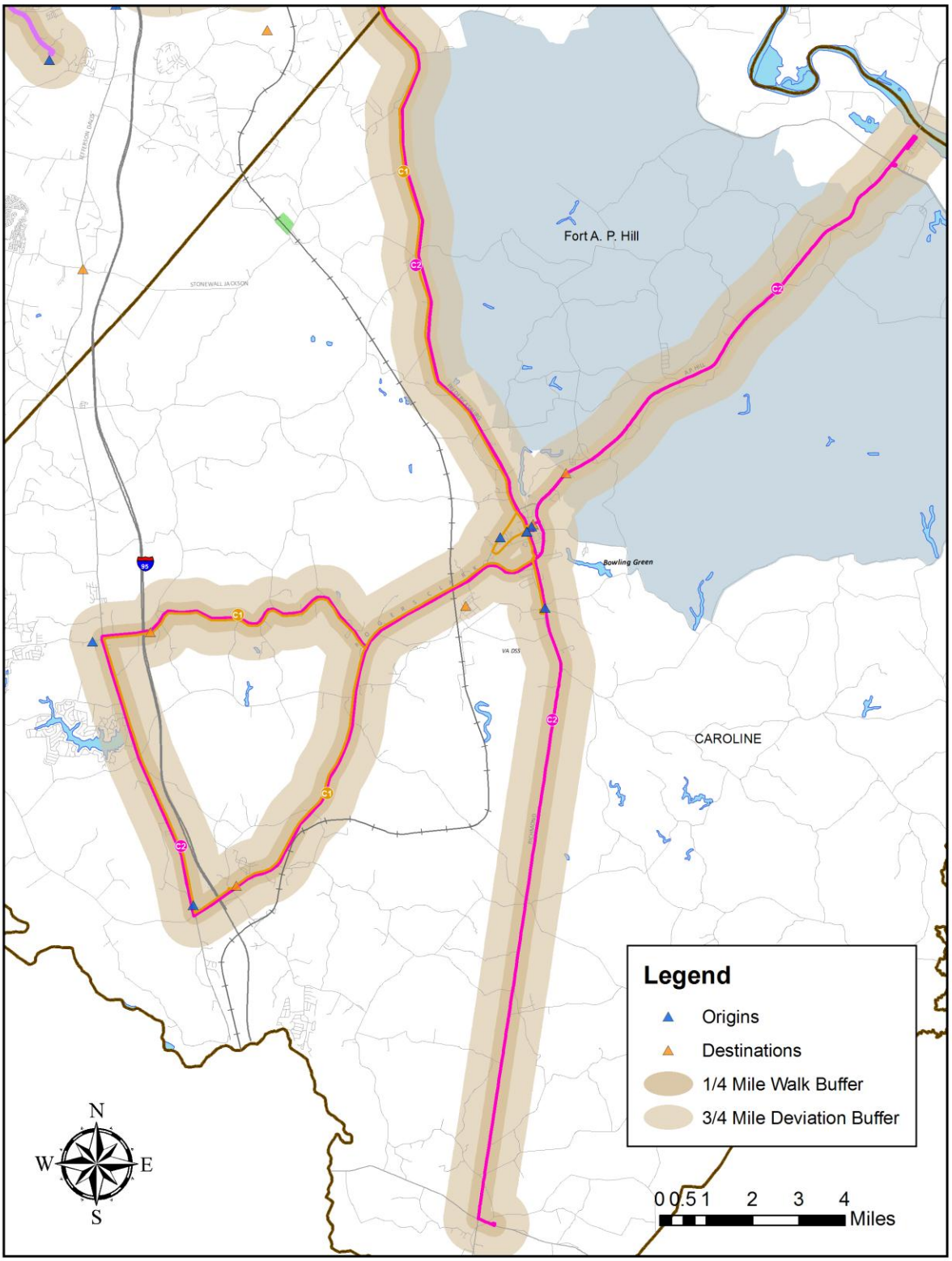


FIGURE 12: TRIPS SURVEYED ON CITY OF FREDERICKSBURG ROUTES

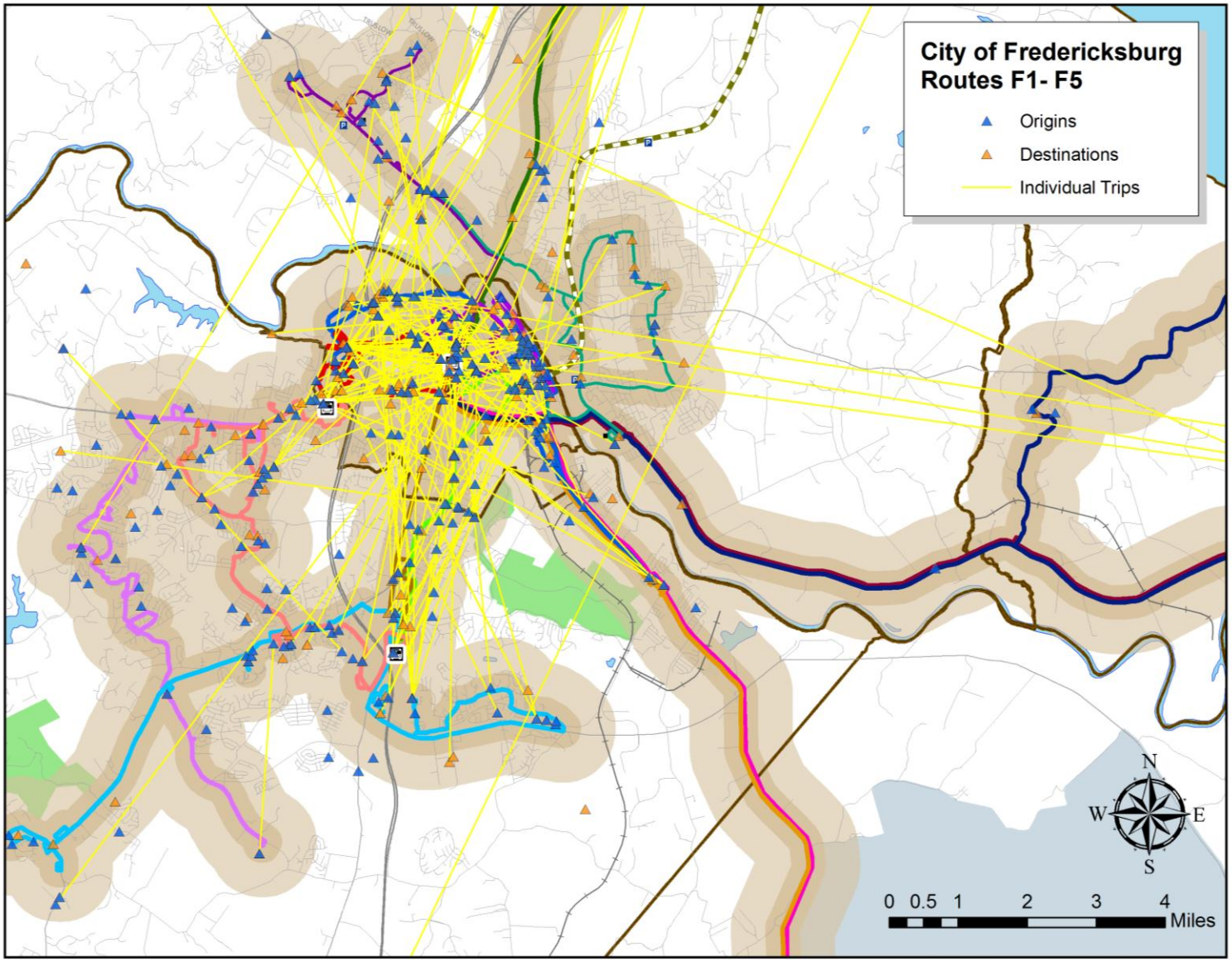


FIGURE 13: TRIPS SURVEYED ON SPOTSYLVANIA COUNTY ROUTES

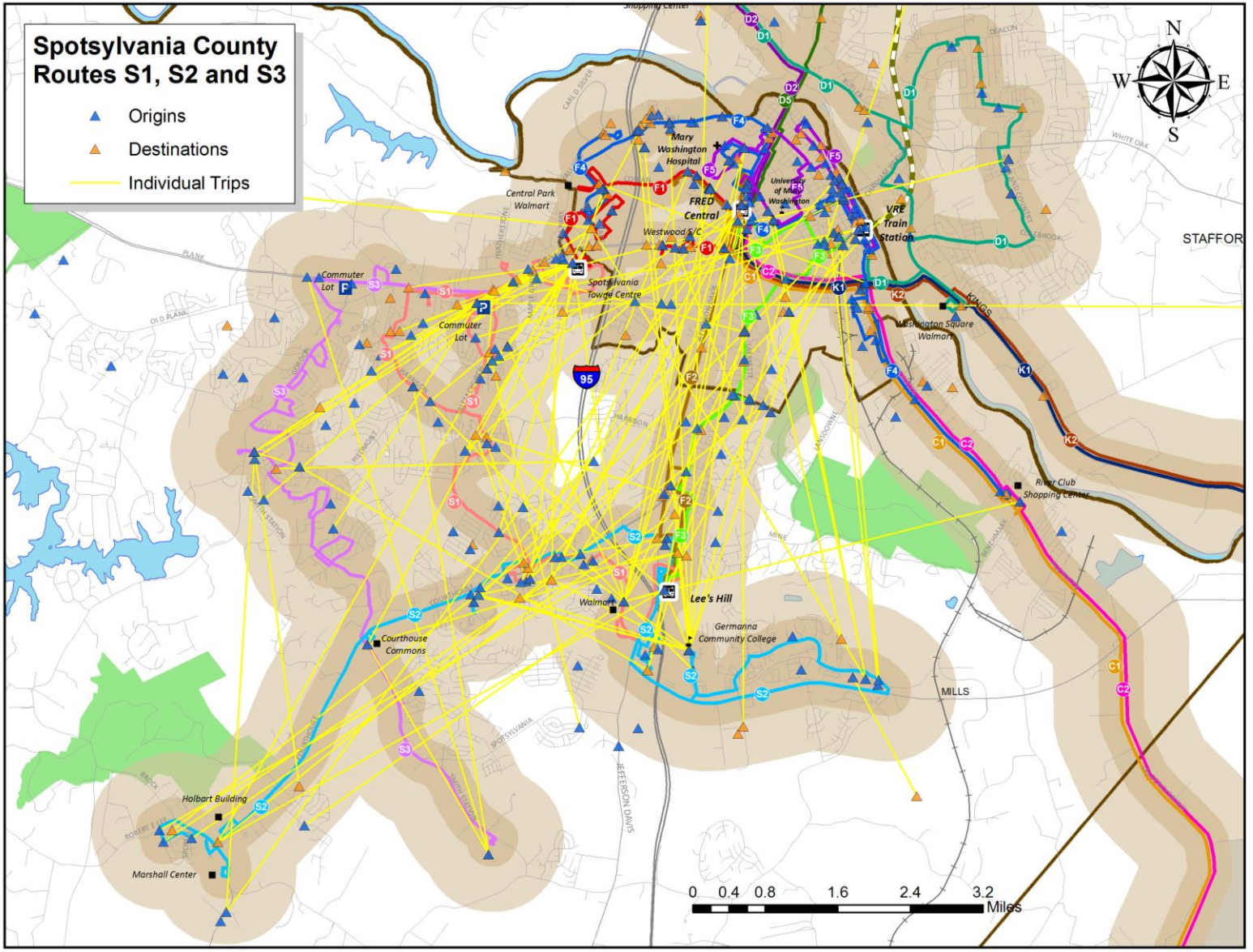


FIGURE 14: TRIPS SURVEYED ON KING GEOURGE COUNTY ROUTES

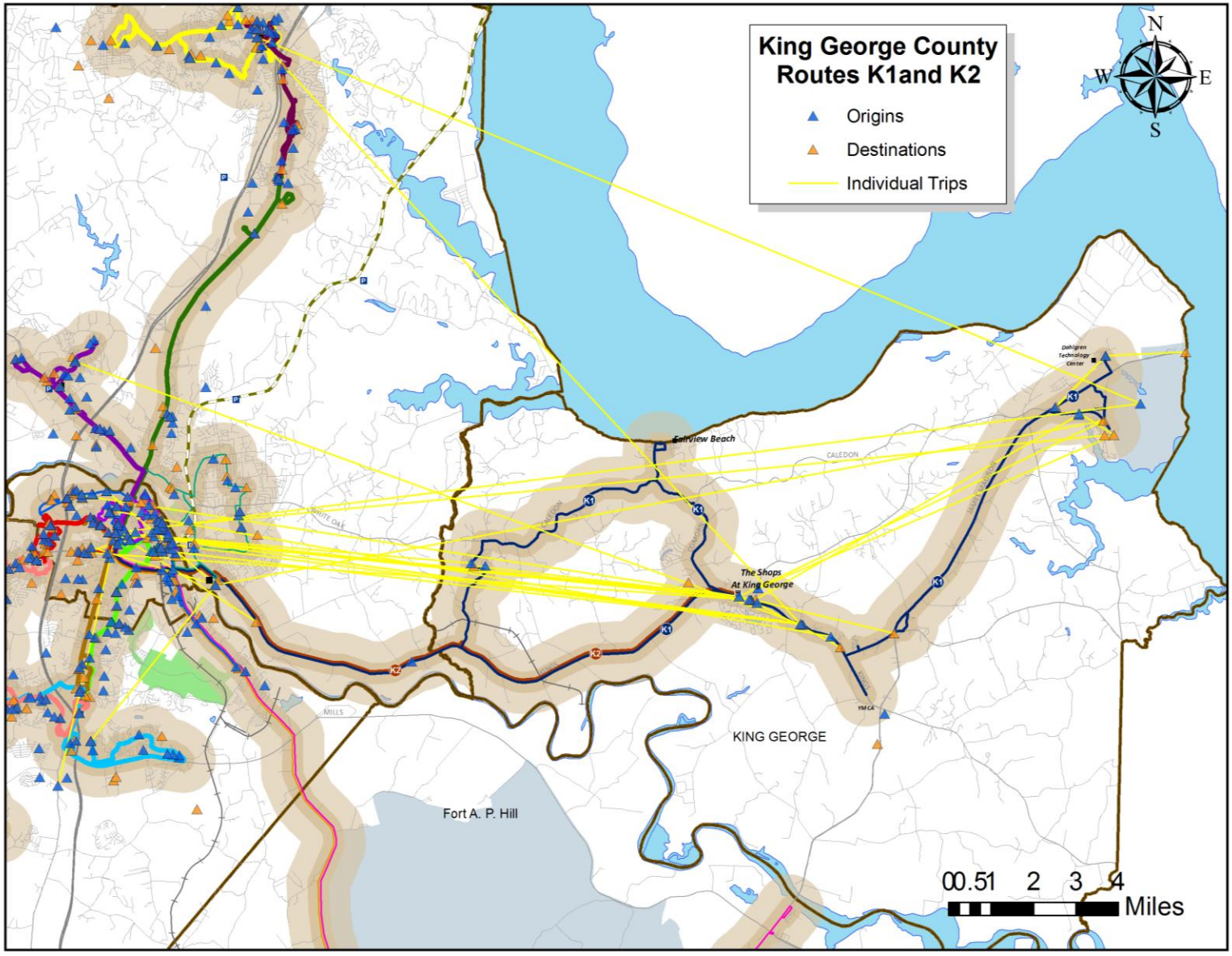


FIGURE 15: TRIPS SURVEYED ON STAFFORD COUNTY ROUTES

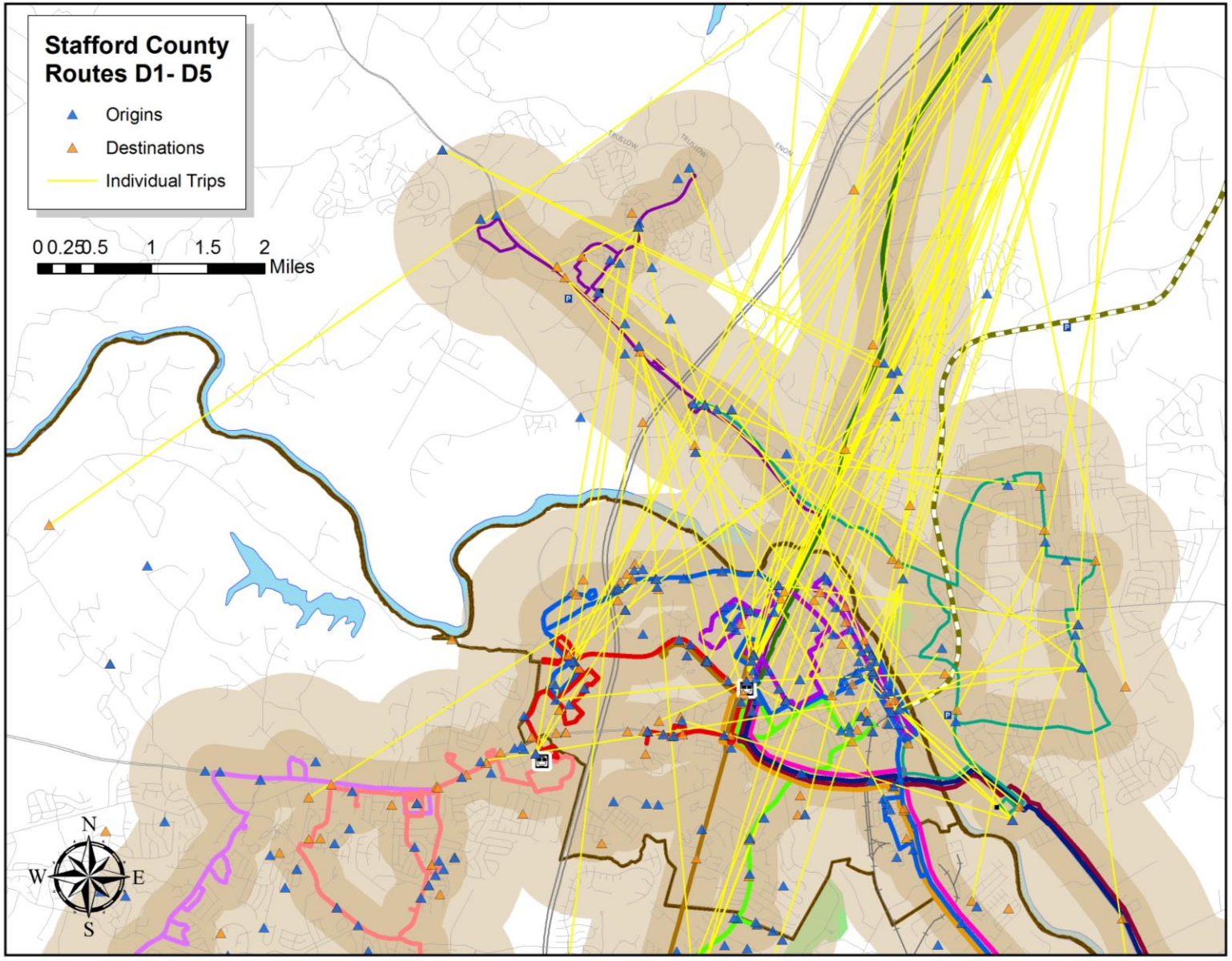


FIGURE 16: TRIPS SURVEYED ON STAFFORD COUNTY ROUTES

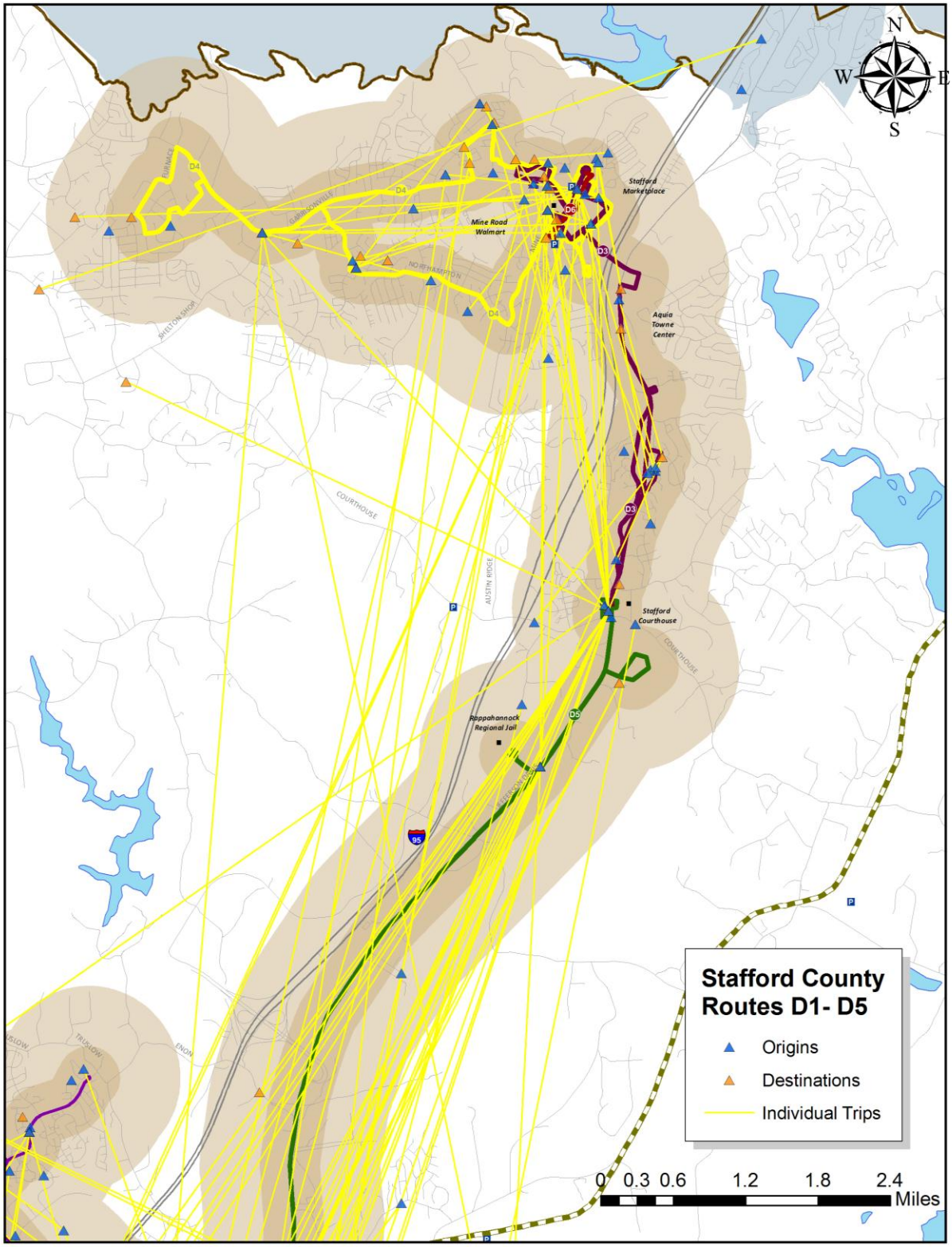


FIGURE 17: TRIPS SURVEYED ON CAROLINE COUNTY ROUTES

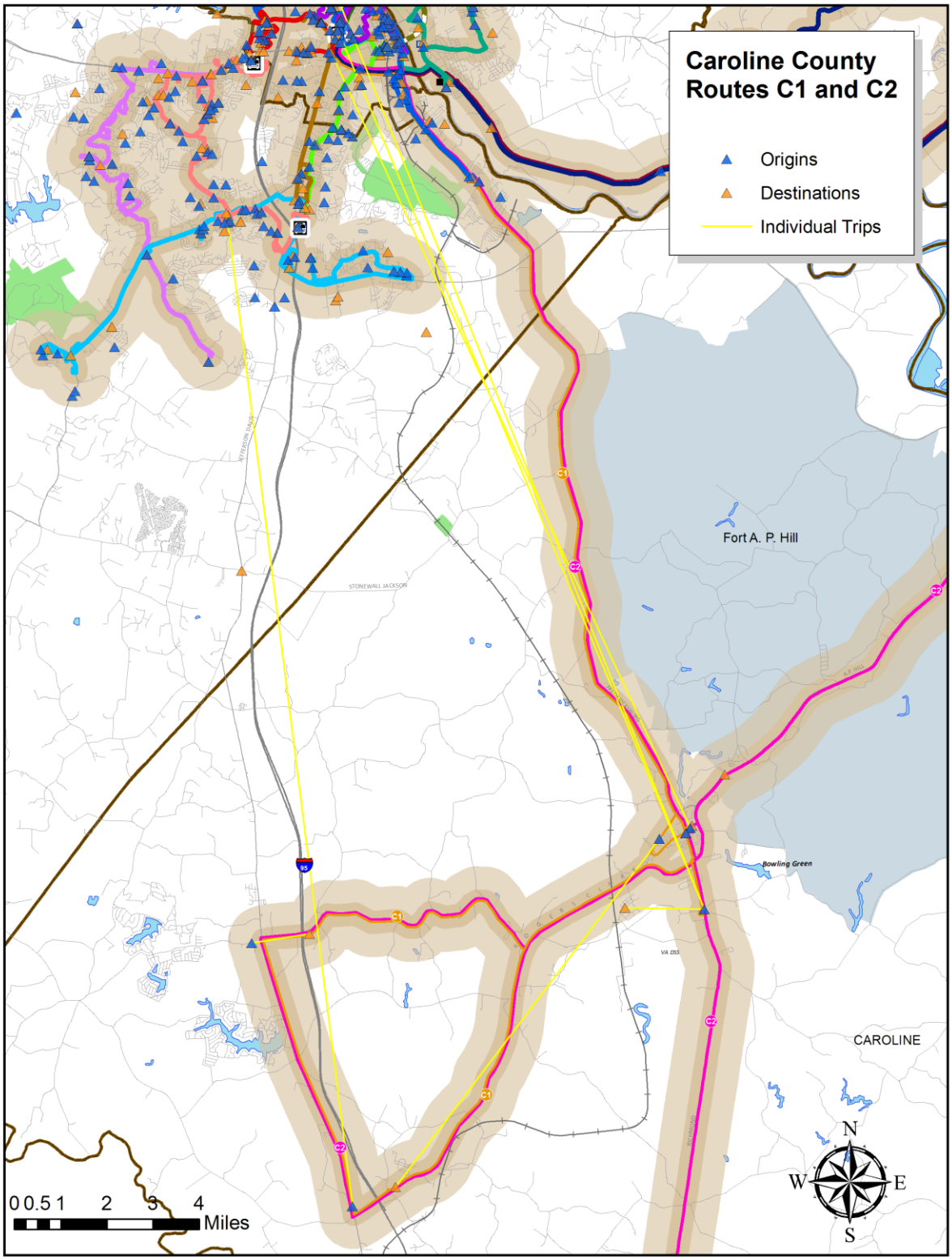


FIGURE 18: TRIPS SURVEYEDON FREDEXPRESS ROUTES

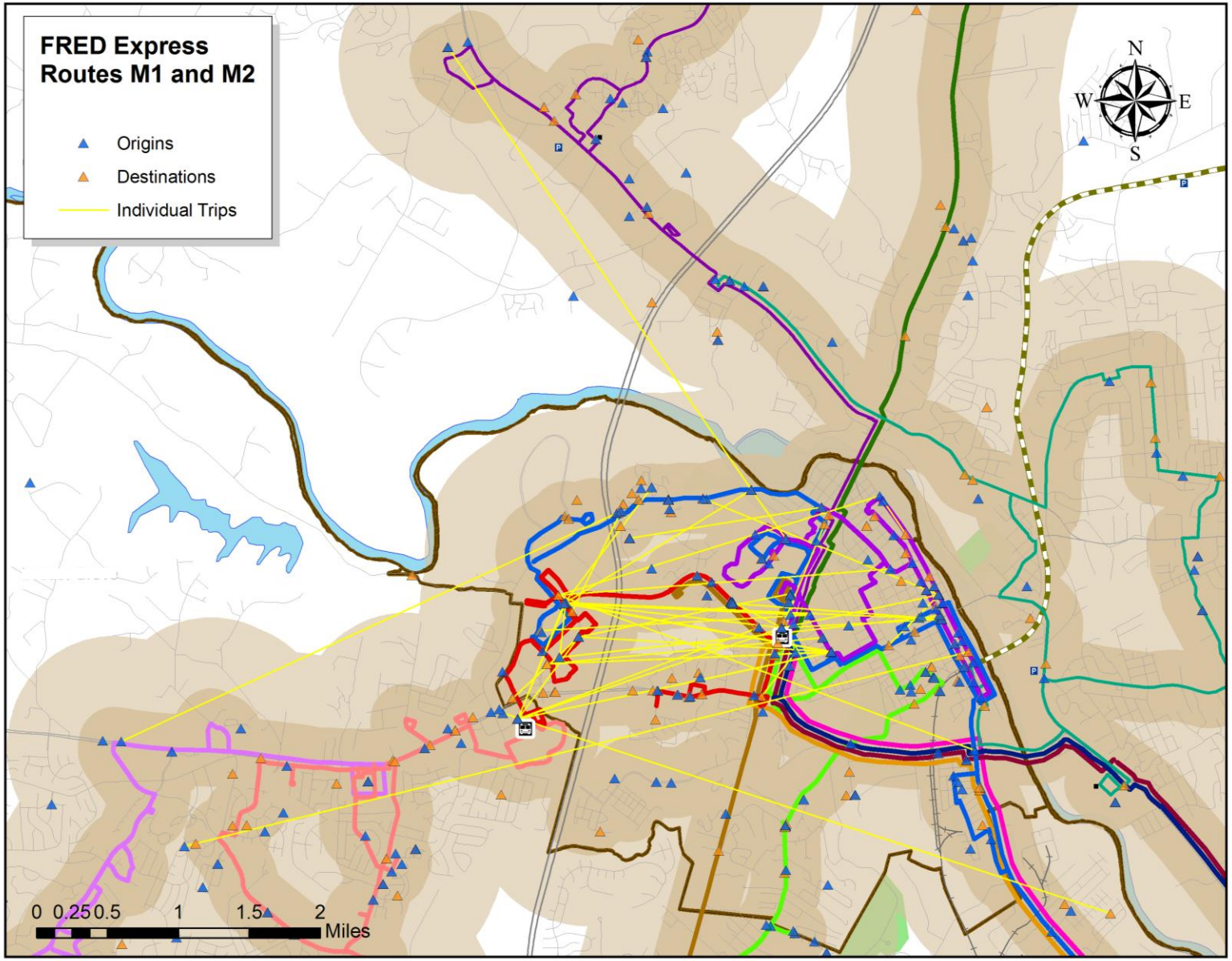
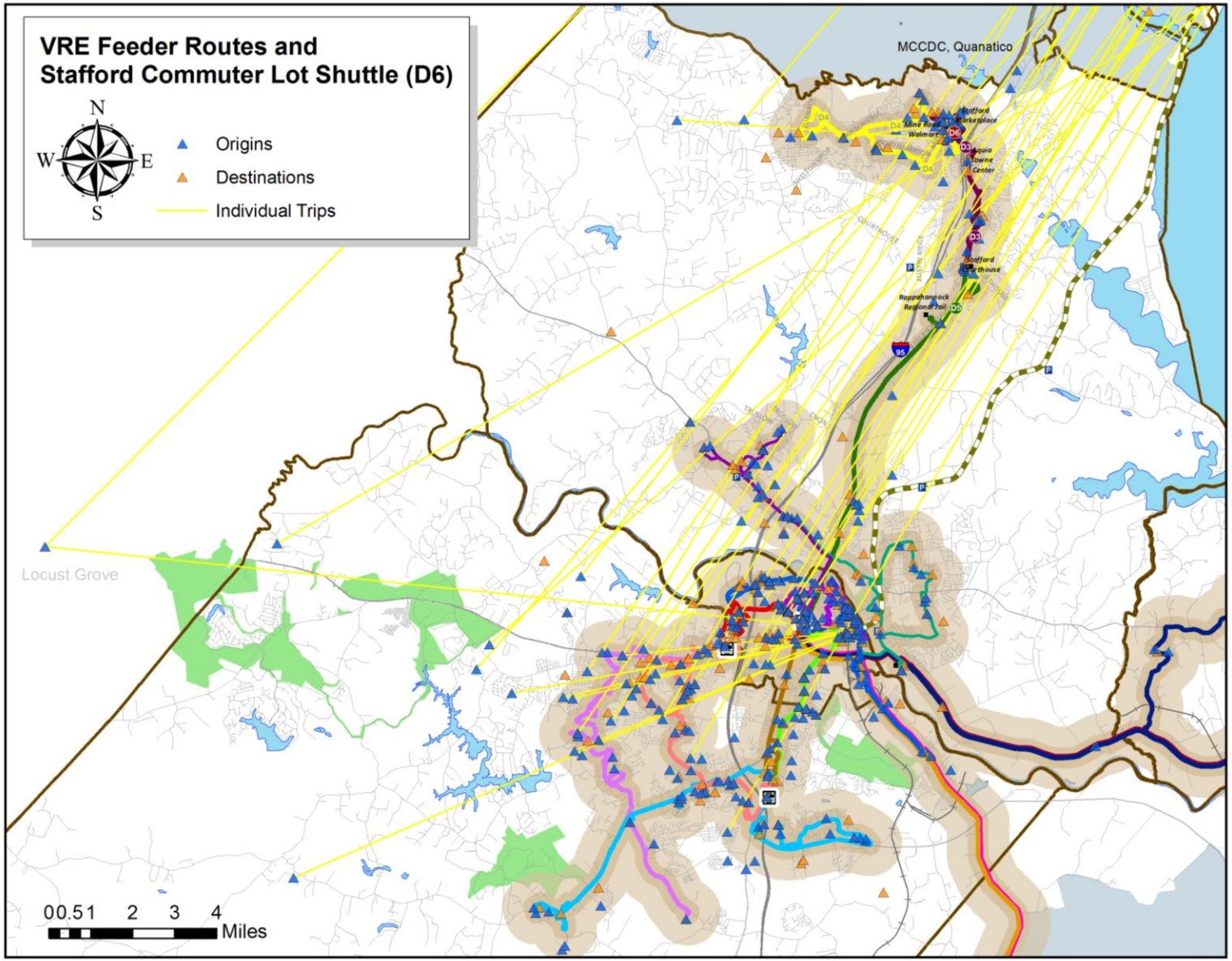


FIGURE 19: TRIPS SURVEYED ON VRE FEEDER ROUTES AND ROUTE D6



## Survey Responses by Question

This section summarizes the expanded survey responses by question for all questions with the exception of the Origin and Destination questions described in the previous section on geocoding. Response rates for each question are identified, followed by detailed analysis of each question.

### Survey Response Rates by Question

Response rates can vary by question based on the how well the survey taker understands the questions as well as the amount of time available to answer each question. Table 6 lists the response rates by question.

**Table 6: Response Rates by Question**

| Response Rate | Fixed | % Total | FRED EX | % Total | VRE Feeder | % Total | Grand Total | % Total |
|---|---|---|---|---|---|---|---|---|
| **1a. Origin** | 843 | 98.7% | 80 | 98.8% | 47 | 100.0% | 970 | 98.8% |
| **1b. Address** | 722 | 84.5% | 76 | 93.8% | 45 | 95.7% | 843 | 85.8% |
| **2a. Destination** | 814 | 95.3% | 76 | 93.8% | 47 | 100.0% | 937 | 95.4% |
| **2b. Address** | 665 | 77.9% | 72 | 88.9% | 36 | 76.6% | 773 | 78.7% |
| **3a. Transfer From** | 824 | 96.5% | 77 | 95.1% | 46 | 97.9% | 947 | 96.4% |
| ***3a. Route*** | *164* | *19.2%* | *4* | *4.9%* | *0* | *0.0%* | *168* | *17.1%* |
| **3b. Access to** | 824 | 96.5% | 76 | 93.8% | 47 | 100.0% | 947 | 96.4% |
| **3b. # Blocks** | 229 | 26.8% | 30 | 37.0% | 3 | 6.4% | 262 | 26.7% |
| **4a. Transfer to** | 810 | 94.8% | 77 | 95.1% | 47 | 100.0% | 934 | 95.1% |
| ***4a. Route #*** | *144* | *16.9%* | *4* | *4.9%* | *0* | *0.0%* | *148* | *15.1%* |
| **4b. Egress** | 817 | 95.7% | 72 | 88.9% | 47 | 100.0% | 936 | 95.3% |
| ***4b. # Blocks*** | *215* | *25.2%* | *23* | *28.4%* | *3* | *6.4%* | *241* | *24.5%* |
| **5. Transfer Wait** | 448 | 52.5% | 20 | 24.7% | 3 | 6.4% | 471 | 48.0% |
| **6. How often ride** | 823 | 96.4% | 75 | 92.6% | 47 | 100.0% | 945 | 96.2% |
| **7. # Vehicles** | 823 | 96.4% | 77 | 95.1% | 46 | 97.9% | 946 | 96.3% |
| **8. Driver License** | 798 | 93.4% | 75 | 92.6% | 45 | 95.7% | 918 | 93.5% |
| **9. Gender** | 811 | 95.0% | 78 | 96.3% | 46 | 97.9% | 935 | 95.2% |
| **10. Employment** | 822 | 96.3% | 76 | 93.8% | 46 | 97.9% | 944 | 96.1% |
| **11. Age** | 829 | 97.1% | 79 | 97.5% | 45 | 95.7% | 953 | 97.0% |
| **12. Income** | 702 | 82.2% | 60 | 74.1% | 38 | 80.9% | 800 | 81.5% |
| **13.Primary Language** | 805 | 94.3% | 75 | 92.6% | 46 | 97.9% | 926 | 94.3% |
| **14. Comments** | 463 | 54.2% | 46 | 56.8% | 6 | 12.8% | 515 | 52.4% |
| **Total Surveys** | **854** | | **81** | | **47** | | **982** | |

When responses are combined for Questions 1a and 2a – where did you start and end this trip; 982 (95%) of the surveys provided a response to both questions. Responses that identify "other" as a response are often invalid, as the survey taker may be making a transfer, and will write bus or train. Invalid responses also arise when respondents answer the same origin and destination, i.e. home/home. Forty surveys responded with origins and destinations listed as home/home. Table 7 shows a matrix of Origin and Destination response totals.

**Table 7: Origin and Destination Matrix**

| Origin | Destination | | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | Work | Home | School (K-12) | Shop | Medical /Dental | Social Rec. | College | Social Serv. | Other | |
| Work | 53 | 78 | 3 | 17 | | 5 | 1 | 1 | 18 | **176** |
| Home/Dorm | 156 | 40 | 5 | 85 | 27 | 23 | 12 | 11 | 70 | **429** |
| School (K-12) | 1 | 2 | 2 | 3 | 1 | | | 1 | | **10** |
| Shopping | 12 | 26 | 2 | 22 | 2 | 4 | 2 | 1 | 12 | **83** |
| Medical or Dental | | 12 | | 5 | 5 | | | | 4 | **26** |
| Social or Recreation | 1 | 2 | | 4 | | 7 | | | 4 | **18** |
| College Student | 7 | 12 | | 14 | | 2 | 1 | | 5 | **41** |
| Social Services | 2 | 3 | | 3 | | 2 | | 2 | 2 | **14** |
| Other | 29 | 23 | | 9 | 7 | 7 | 8 | | 52 | **135** |
| **Grand Total** | **261** | **198** | **12** | **162** | **42** | **50** | **24** | **16** | **167** | **932** |

The following provides response rates and expansion results for each question in the survey. These begin with Questions 1 through 6, which ask the respondents about the trip they are traveling on while completing the survey.

### SECTION I: TELL US ABOUT YOUR TRIP

**Q1.** Question 1 asks respondents where they began their one way trip, with check box selections for Work, Home/Dorm, School (K-12), Shopping, Medical or Dental, Social or Recreation, College/University as a Student, or Social Services. Another option is *Other*, which includes a blank line for respondents to fill in the other response. Respondents that selected the other option included responses such as bank, bus station, commuter lot, courthouse, FRED Central, greyhound, train station, library, jail and job search. Almost half of the FRED riders start their trip at home (47%) as shown in Figure 20. Among the various types of service, home origins make up 76 percent of the VRE Feeder service (all trips surveyed were in the AM), 44 percent of FREDExpress service and 47 percent of the fixed route service, as shown in Table 8. Sixteen percent of all riders originate from work; however, this varies by service type with 17 percent of the fixed route riders coming from work and only six percent of the FREDExpress riders traveling from work. Other responses make up a large percentage (14%), with several FRED Central responses, indicating respondents do not understand the question. Shopping origins make up nine percent of the riders and 14 percent of the FREDExpress riders. As expected, FREDExpress has 15 percent of the riders originating from College/University, compared to only four percent of the fixed route riders.

**Figure 20: Trip Origins**

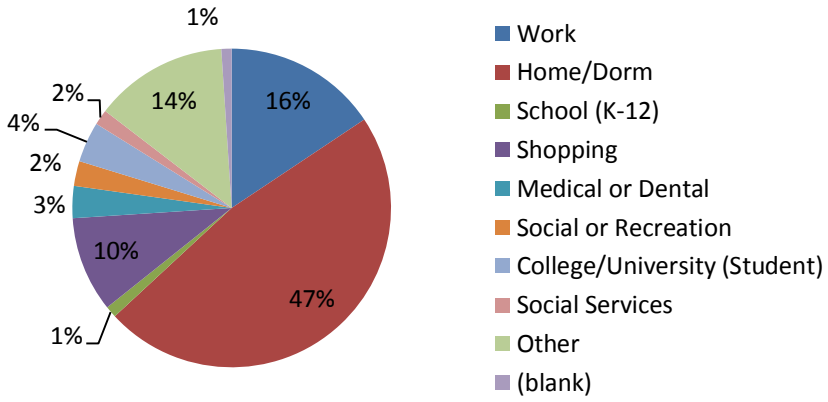



**Table 8: Trip Origins**

| Origin | Total Responses | Expanded Responses | | | |
|---|---|---|---|---|---|
| | | Fixed | FREDEX | VRE Feeder | Grand Total |
| **Work** | 183 | 324 | 16 | 8 | **348** |
| **Home/Dorm** | 442 | 891 | 116 | 49 | **1,056** |
| **School (K-12)** | 10 | 22 | 4 | | **26** |
| **Shopping** | 89 | 179 | 37 | | **216** |
| **Medical or Dental** | 27 | 72 | | | **72** |
| **Social or Recreation** | 19 | 56 | | | **56** |
| **College/University (Student)** | 41 | 53 | 38 | | **91** |
| **Social Services** | 15 | 30 | 5 | | **35** |
| **Other** | 144 | 254 | 40 | 8 | **301** |
| **(blank)** | 12 | 18 | 5 | | **23** |
| **Grand Total** | **982** | **1,898** | **261** | **65** | **2,224** |

2a. Question 2a asks "Where will you end this One-Way Trip?" The survey response selections are the same as in Question 1a. Table 9 shows the total responses and expanded responses for Question 2a. Twenty-five percent of all FRED riders and fixed route riders are traveling to work, with 18 percent of the FREDExpress riders traveling to work. Twenty-two percent of FRED riders are traveling home and 17 percent are making shopping trips, as shown in Figure 21. Thirty-nine percent of the FREDExpress riders are traveling to shopping destinations. VRE Feeder service riders replied "other" with Train Station filled in as the response. This, combined with the 60 percent that travel to work, accounts for the 74 percent of the home origins. Two percent of the VRE Feeder service riders are traveling to medical destinations.

**Figure 21: Trip Destination**

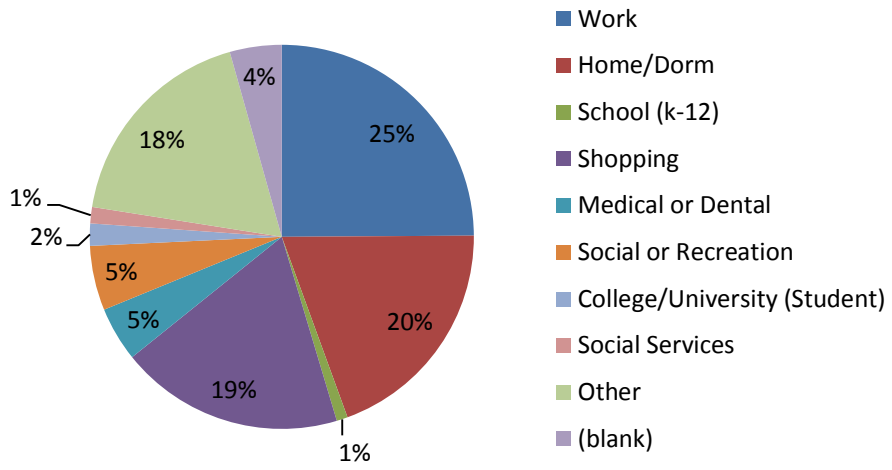



**Table 9: Trip Destination**

| Destination | Total Responses | Expanded Responses | | | |
|---|---|---|---|---|---|
| | | Fixed | FREDEX | VRE Feeder | Grand Total |
| **Work** | 263 | 468 | 47 | 39 | 554 |
| **Home/Dorm** | 199 | 413 | 19 | 3 | 435 |
| **School (k-12)** | 12 | 21 | | | 21 |
| **Shopping** | 163 | 318 | 102 | | 419 |
| **Medical or Dental** | 42 | 96 | 5 | 1 | 102 |
| **Social or Recreation** | 50 | 99 | 22 | | 121 |
| **College/University (Student)** | 24 | 37 | 4 | | 42 |
| **Social Services** | 16 | 31 | | | 31 |
| **Other** | 168 | 335 | 46 | 22 | 404 |
| **(blank)** | 45 | 81 | 16 | | 97 |
| **Grand Total** | **982** | **1,898** | **261** | **65** | **2,224** |

Tables 10 and 11 show the total and percentage of trip purpose origin and destinations for all FRED routes. Many FRED riders are traveling between home and work (23 percent), with less work to home trips compared to home to work trips. This could be due to survey fatigue, with passengers being surveyed in the morning and refusing to fill out a survey on the return trip. This could also be an indicator that riders are able to use FRED to get to their jobs; however, the service may not work late enough to give them a ride back home, and other modes of transportation are used for the return trip.

**Table 10: Origin and Destination Matrix – Expanded Responses for all FRED Routes**

| O&D Matrix | Work | Home/ Dorm | School (k-12) | Shop-ping | Medical/ Dental | Social/ Rec. | College/ Univ. | Social Serv. | Other | (blank) | Grand Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Work | 101 | 151 | 4 | 36 | | 10 | 2 | 2 | 26 | 16 | 348 |
| Home/Dorm | 343 | 86 | 10 | 221 | 63 | 69 | 21 | 21 | 196 | 26 | 1,056 |
| School (K-12) | 2 | 6 | 3 | 7 | 6 | | | 3 | | | 26 |
| Shopping | 20 | 76 | 3 | 53 | 8 | 9 | 4 | 2 | 28 | 13 | 216 |
| Medical or Dental | | 37 | | 16 | 11 | | | | 7 | 1 | 72 |
| Social or Recreation | 2 | 3 | | 20 | | 11 | | | 19 | 1 | 56 |
| College/University | 19 | 27 | | 31 | | 4 | 2 | | 8 | | 91 |
| Social Services | 5 | 6 | | 10 | | 3 | | 3 | 3 | 5 | 35 |
| Other | 58 | 42 | | 24 | 14 | 15 | 13 | | 115 | 20 | 301 |
| (blank) | 4 | 1 | | 1 | | | | | 1 | 15 | 23 |
| **Grand Total** | **554** | **435** | **21** | **419** | **102** | **121** | **42** | **31** | **404** | **97** | **2,224** |

**Table 11: Origin and Destination Matrix – Percent of Expanded Responses for all FRED Routes**

| O&D Matrix | Work | Home/ Dorm | School (k-12) | Shop-ping | Medical / Dental | Social/ Rec. | College/ Univ. | Social Serv. | Other | (blank) | Grand Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Work | 4.5% | 6.8% | 0.2% | 1.6% | 0.0% | 0.4% | 0.1% | 0.1% | 1.1% | 0.7% | 15.6% |
| Home/Dorm | 15.4% | 3.9% | 0.5% | 9.9% | 2.8% | 3.1% | 0.9% | 0.9% | 8.8% | 1.2% | 47.5% |
| School (K-12) | 0.1% | 0.3% | 0.1% | 0.3% | 0.3% | 0.0% | 0.0% | 0.1% | 0.0% | 0.0% | 1.2% |
| Shopping | 0.9% | 3.4% | 0.1% | 2.4% | 0.4% | 0.4% | 0.2% | 0.1% | 1.3% | 0.6% | 9.7% |
| Medical or Dental | 0.0% | 1.7% | 0.0% | 0.7% | 0.5% | 0.0% | 0.0% | 0.0% | 0.3% | 0.1% | 3.2% |
| Social or Recreation | 0.1% | 0.1% | 0.0% | 0.9% | 0.0% | 0.5% | 0.0% | 0.0% | 0.9% | 0.1% | 2.5% |
| College/University | 0.8% | 1.2% | 0.0% | 1.4% | 0.0% | 0.2% | 0.1% | 0.0% | 0.4% | 0.0% | 4.1% |
| Social Services | 0.2% | 0.3% | 0.0% | 0.5% | 0.0% | 0.1% | 0.0% | 0.1% | 0.1% | 0.2% | 1.6% |
| Other | 2.6% | 1.9% | 0.0% | 1.1% | 0.6% | 0.7% | 0.6% | 0.0% | 5.2% | 0.9% | 13.5% |
| (blank) | 0.2% | 0.0% | 0.0% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.7% | 1.0% |
| **Grand Total** | **24.9%** | **19.5%** | **0.9%** | **18.9%** | **4.6%** | **5.4%** | **1.9%** | **1.4%** | **18.1%** | **4.4%** | **100.0%** |

**Q3a.** Question 3a asks respondents "Did you transfer from another bus on this one-way trip to the bus you are riding now?" Among the FRED riders that responded, 319 made a transfer from another bus. This is 31 percent of the expanded responses, as shown in Figure 22. Table 12 shows the total and expanded responses. Nine of the Route M2 riders on FREDExpress transferred from Route M1.

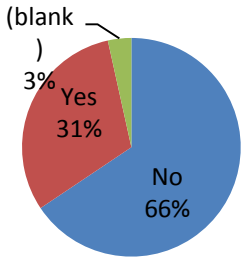



**Figure 22: Transfer from Another Bus**

**Table 12: Transfer from Another Bus**

| Transfer from Another Route | Total Responses | Expanded Results | | | |
|---|---|---|---|---|---|
| | | Fixed | FREDEX | VRE Feeder | Grand Total |
| **No** | 628 | 1,182 | 214 | 64 | 1,459 |
| **Yes** | 319 | 655 | 33 | | 688 |
| **(blank)** | 35 | 62 | 14 | 1 | 77 |
| **Grand Total** | **982** | **1,898** | **261** | **65** | **2,224** |

Q4a. Question 4a asks, "Will you transfer to another bus on this one way trip?" with 309 respondents answering yes. Thus, 32 percent of the expanded responses will to transfer to another bus, as shown in Figure 23. Table 13 shows the total and expanded responses to question 4a.

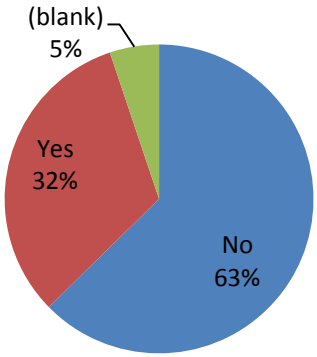



**Figure23: Transfer to Another Bus**

**Table 13: Transfer to Another Bus**

| Transfer to Another Bus | Total Responses | Expanded Responses | | | |
|---|---|---|---|---|---|
| | | Fixed | FREDEX | VRE Feeder | Grand Total |
| **No** | 625 | 1,116 | 214 | 64 | 1,394 |
| **Yes** | 309 | 677 | 38 | 1 | 716 |
| **(blank)** | 48 | 106 | 9 | | 115 |
| **Grand Total** | **982** | **1,898** | **261** | **65** | **2,224** |

Table 14 is a Transfer Matrix with expanded responses of surveys that included a route number for Questions 3a, "transfer from another bus." Routes F1, F3 and F4 have the most transfer activity.

**Table 14: Transfer Matrix: Transfer from Another Bus**

| Transfer From | Transfer to | | | | | | | | | | | | | | | | Grand Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | C2 | D1 | D2 | D3 | D4 | D5 | F1 | F2 | F3 | F4 | F5 | K1 | K2 | S1 | S2 | S3 | |
| D1 | | | 3 | | | | | | | 5 | | | 2 | | | | 9 |
| D1/F4 | | | | | | 1 | | | | | | | | | | | 1 |
| D2 | | 1 | | | | 1 | 6 | 2 | 8 | | 4 | | | 1 | | | 23 |
| D3 | | | | | 2 | 8 | | | | | | | | | | | 10 |
| D3/D5 | | | | | | | | 2 | | | | | | | | | 2 |
| D4 | | | | 1 | | 2 | | | | | | | | | | | 4 |
| D5 | | | | 6 | | | 9 | 4 | | | | | | | | | 19 |
| D5/F2 | | | | | | | | | | | | | | | 2 | | 2 |
| D6 | | | | 2 | | | | | | | | | | | | | 2 |
| F1 | 1 | | | | | 2 | | 2 | 11 | 7 | 4 | | 1 | 9 | | | 37 |
| F2 | | | 3 | | | 4 | 3 | | 3 | 2 | 4 | | | 9 | 9 | | 36 |
| F2/D2 | | 1 | | | | | | | | | | | | | | | 1 |
| F2/F4 | | | | | | | | | | | | | | | 2 | | 2 |
| F3 | | | 17 | | | 5 | 17 | 4 | | 2 | | | | 5 | 11 | | 61 |
| F4 | | | 3 | | | | 9 | 2 | 14 | 9 | 12 | 2 | 1 | | 1 | | 53 |
| F4/F2 | | 1 | | | | | | | | | | | | 2 | | | 3 |
| F5 | | 1 | | | | | 6 | 2 | | 2 | | | | 1 | | | 13 |
| K1 | | | | | | | | | | 2 | | | 3 | | | | 5 |
| K2 | | | 8 | | | | | | | | | 4 | | | | | 11 |
| S1 | | | | | | | 17 | 2 | 6 | 2 | | | | 2 | 4 | 2 | 35 |
| S1/F3 | | | | | | | | | | | | 1 | | | | | 1 |
| S2 | | | | | | | | 8 | 3 | | | | | 2 | 2 | 2 | 16 |
| S3 | | | | | | | | | | | | | | 4 | 3 | | 7 |
| S2/D3 | | | | | | | 3 | | | | | | | | | | 3 |
| **Grand Total** | **1** | **4** | **32** | **9** | **2** | **22** | **69** | **27** | **45** | **33** | **23** | **7** | **6** | **36** | **34** | **4** | **354** |

Table 15 on the following page shows the transfer matrix for expanded responses of riders who said that they will transfer to another bus (Q4a). Routes F3 and S1 have the highest number of expanded responses.

**Table 15: Will Transfer to Another Bus**

| Transfer From | Transfer To | | | | | | | | | | | | | | | | | | | | | | | | Grand Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | C2 | D1 | D1 D2 | D2 | D2 D1 | D3 | D3 D4 | D4 | D5 | F1 | F1 S1 | F2 | F2 D5 D3 D4 | F2 F3 | F2 S2 | F3 | F4 | F4 F2 S2 | F5 | K1 | K2 | S1 | S2 | S3 | |
| C1 | | | | | | | | | | 2 | | | | | | | | | | | | | | | 2 |
| C2 | | | | | | | | | | | | | | | | | | | | | | | | | 0 |
| D1 | | | | | | | | | | | | | | | | | | | | 3 | | | | | 3 |
| D2 | | | | | | | | | 5 | 5 | | | | | | 7 | | | 5 | | | | | | 22 |
| D3 | | | | | | | | 5 | 4 | 1 | | | | | | 1 | 1 | | | | | | | | 14 |
| D4 | | | | | | 2 | | | 2 | | | | | | | | | | | | | | | | 3 |
| D5 | | | 1 | 4 | 2 | 6 | 1 | 1 | | 2 | 1 | 2 | | | 2 | 4 | | | | | | | | | 23 |
| F1 | | | | | | | | | | | | | | | | | 3 | | 15 | | | 3 | | | 20 |
| F2 | | | | | | | | | | 2 | | | | | | 2 | 8 | | 2 | | | 10 | 8 | | 31 |
| F3 | 6 | | | | | | | | 17 | 6 | | 6 | | | | | 3 | | 6 | | | 23 | 11 | 6 | 83 |
| F4 | | | | 2 | | | | | | 9 | | 7 | | | | 2 | | | 14 | | | 5 | | | 40 |
| F5 | | 4 | | | | | | | | | | 4 | | 4 | | | 25 | | | | | | | | 36 |
| K1 | | | | | | | | | | | | | | | | | 1 | | | | 1 | | | | 2 |
| K2 | | | | 2 | | | | | | 2 | | 1 | | | | 3 | 3 | | | 1 | | | | | 10 |
| S1 | | | | 1 | | | | | | 12 | | | | | | 7 | | | | | | 2 | 2 | 6 | 31 |
| S2 | | | | | | | | | | | | 6 | 1 | | | 13 | 1 | 2 | | | | 3 | | | 25 |
| S3 | | | | | | | | | | | | | | | | | | | | | | 2 | | | 2 |
| **Grand Total** | **6** | **4** | **1** | **9** | **2** | **7** | **1** | **6** | **28** | **41** | **1** | **25** | **1** | **4** | **2** | **39** | **44** | **2** | **41** | **4** | **1** | **47** | **22** | **12** | **348** |

**Q5.** Question 5 asks respondents, "If you transferred from another bus on this trip, how long did you wait at the bus stop?" There were 469 responses to this question on the survey. Most FRED passengers wait for the bus from zero to five minutes (28%) and six to 10 minutes (27%), as shown in Figure 24. Table 16 shows the total and expanded responses for the number of minutes passengers waited to make a transfer. Although there were 469 responses, only 319 of those surveyed answered question 3a, "did you transfer from another bus" affirmatively. This indicates that some respondents answered this question or the transfer question incorrectly.

**Figure 24: Expanded Number of Minutes Waited To Make a Transfer**

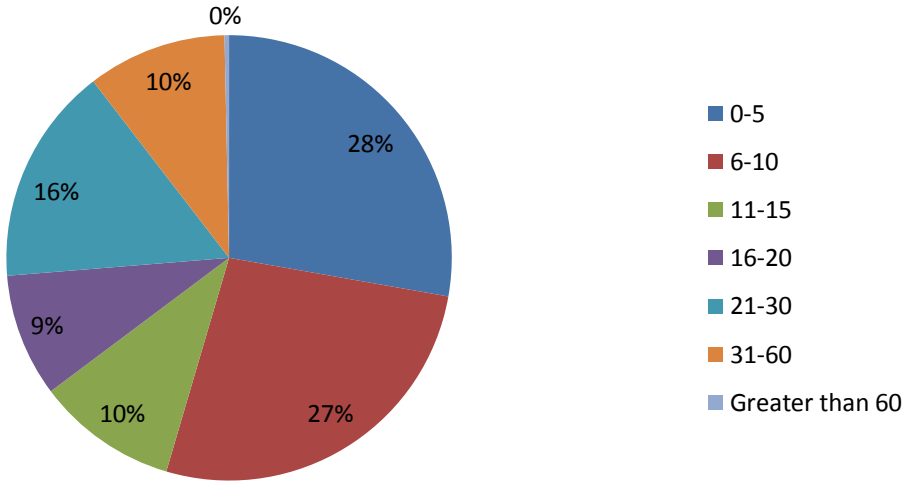



**Table 16: Number of Minutes Waited for Transfer**

| Transfer Wait Times | Total Responses | Expanded Responses | | | |
|---|---|---|---|---|---|
| | | Fixed | FREDEX | VRE Feeder | Grand Total |
| **0-5** | 134 | 286 | 16 | | 302 |
| **6-10** | 112 | 274 | 17 | | 291 |
| **11-15** | 49 | 102 | 9 | | 111 |
| **16-20** | 42 | 85 | 12 | | 97 |
| **21-30** | 79 | 163 | 7 | 3 | 172 |
| **31-60** | 50 | 102 | 7 | 1 | 110 |
| **Greater than 60** | 3 | 4 | | | 4 |
| **(blank)** | 513 | 883 | 192 | 61 | 1,137 |
| **Grand Total** | **982** | **1,898** | **261** | **65** | **2,224** |

**Q3b.** Question 3b asks FRED riders about their mode of access to the bus, "How did you get from your starting place to the first bus in this one-way trip?" A series of check boxes are provided that include: Walked ___blocks, drove/rode in a car and parked, bicycle, dropped off by someone, and other. Other responses include bus, greyhound, school bus and VRE. Seventy-eight percent of all FRED riders walk to the bus stop and 10 percent are dropped off by someone. Figure 25 shows the percentage of expanded responses with FRED riders' mode of access to the bus stop. Eighty-three percent of FREDExpress riders walk to the bus stop and, as expected, 73 percent of the VRE Feeder service riders drive to the bus stop. Only two percent of the fixed route riders drove a car and parked at the bus stop. Table 17 shows the total and expanded responses for question 3b.

**Figure 25: Access to the Bus Stop**

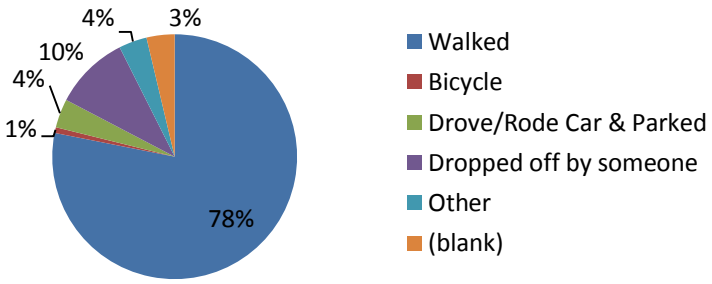



**Table 17: Access to the Bus Stop**

| 3b. Access to Bus | Total Responses | Expanded Responses | | | |
|---|---|---|---|---|---|
| | | Fixed | FREDEX | VRE Feeder | Grand Total |
| **Walked** | 731 | 1,508 | 217 | 12 | 1,738 |
| **Bicycle** | 9 | 17 | | | 17 |
| **Drove/Rode Car & Parked** | 59 | 35 | 2 | 48 | 85 |
| **Dropped off by someone** | 106 | 212 | 4 | 4 | 220 |
| **Other** | 42 | 63 | 18 | 1 | 83 |
| **(blank)** | 35 | 63 | 19 | | 82 |
| **Grand Total** | **982** | **1,898** | **261** | **65** | **2,224** |

Among those riders that walk to the bus stop, most walk zero to one block, followed by one to three blocks, as shown in Figure 26. Seventy-one percent of the expanded walk responses did not fill in the number of blocks as shown in Figure 27.

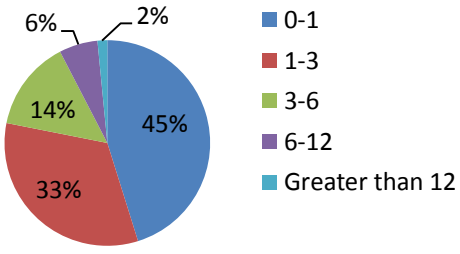



FIGURE 26: BLOCKS WALKED TO BUS STOP

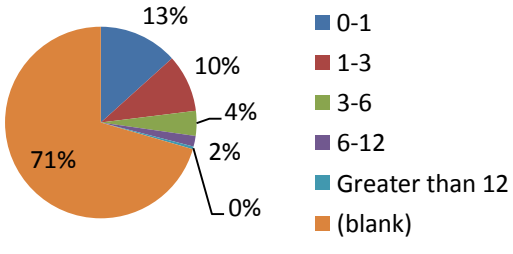



FIGURE 27: BLOCKS WALKED TO BUS STOP (ALL RESPONSES)

**Q4B.** Question 4b asks respondents, "How you will get to your ending place from the last bus on this one-way trip?" Seventy-six percent of all FRED riders walk from the bus stop to their destination; however, 49 percent of the VRE Feeder service riders wrote other, with the VRE train as the mode of access, as shown in Figure 28. Table 18 shows the total and expanded responses for question 4b.

**Figure28: Mode of Access from Bus Stop to Destination**

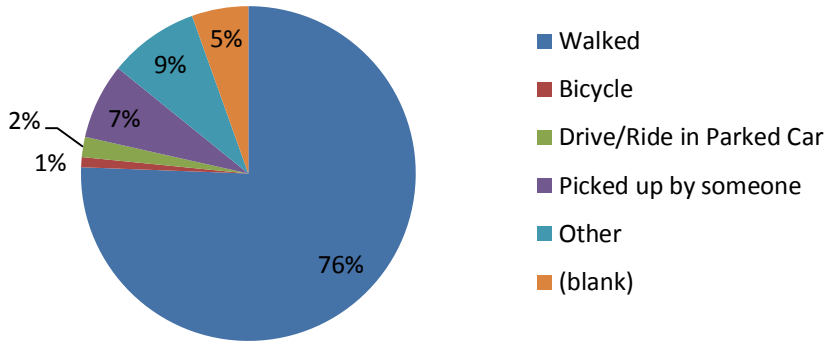



**Table 18: Mode of Access form Bus Stop to Destination**

| Egress From Bus | Total Responses | Expanded Responses | | | |
|---|---|---|---|---|---|
| | | Fixed | FREDEX | VRE Feeder | Grand Total |
| **Walked** | 734 | 1,467 | 192 | 23 | 1,682 |
| **Bicycle** | 11 | 22 | | | 22 |
| **Drive/Ride in Parked Car** | 26 | 32 | 2 | 9 | 43 |
| **Picked up by someone** | 67 | 148 | 14 | 1 | 162 |
| **Other** | 98 | 134 | 28 | 32 | 194 |
| **(blank)** | 46 | 96 | 25 | | 121 |
| **Grand Total** | **982** | **1,898** | **261** | **65** | **2,224** |

Among the FRED riders that walk to their destination from the bus stop, most walk zero to one block, followed by one to three blocks, as shown in Figure 29. Like Question 3b, 73 percent of the respondents who walk did not list the number of blocks walked, as shown in Figure 30.

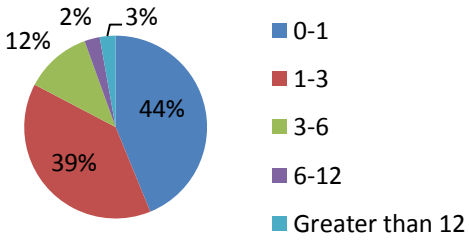



FIGURE 29: NUMBER OF BLOCKS WALKED TO DESTINATION

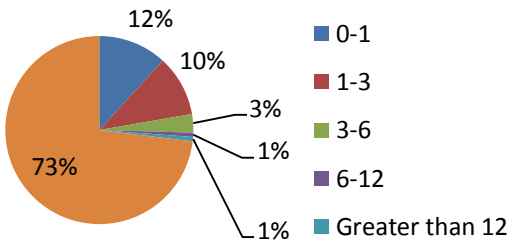



FIGURE 30: NUMBER OF BLOCKS WALKED TO DESTINATION (ALL RESPONSES)

**Q6**. The final question that refers to the FRED rider's trip is Question 6: "How often do you ride FRED service?" The majority of FRED riders use the service four or more days a week (54%). This is followed by 25 percent of the riders using the service two to three days a week, as shown in Figure 31. Table 19 shows the total and expanded responses for fixed route, FREDExpress and VRE Feeder service. Forty-one percent of the FREDExpress riders use the service four or more days a week and 83.2 percent of the VRE Feeder Service riders use the service four or more days a week.

**Figure 31: How often do you ride FRED Service?**

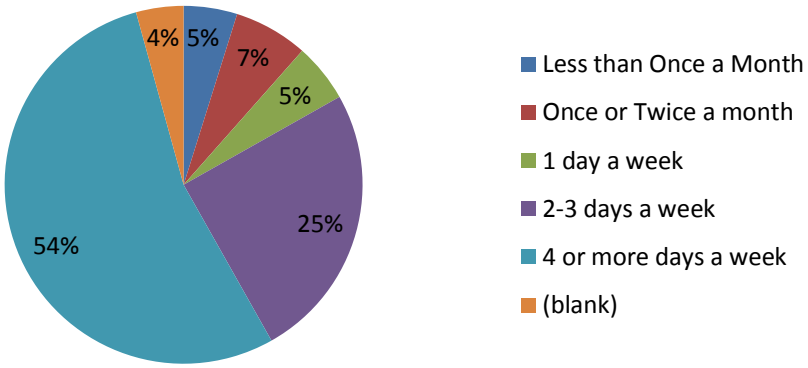



**Table 19: How often do you ride FRED Service?**

| How often do you ride FRED service | Total Responses | Expanded Responses | | | |
|---|---|---|---|---|---|
| | | Fixed | FREDEX | VRE Feeder | Grand Total |
| **Less than Once a Month** | 46 | 86 | 22 | | 108 |
| **Once or Twice a month** | 71 | 103 | 40 | 5 | 149 |
| **1 day a week** | 49 | 113 | 5 | | 118 |
| **2-3 days a week** | 241 | 483 | 67 | 6 | 556 |
| **4 or more days a week** | 538 | 1,039 | 106 | 54 | 1,199 |
| **(blank)** | 37 | 74 | 21 | | 95 |
| **Grand Total** | **982** | **1,898** | **261** | **65** | **2,224** |

## SECTION II: TELL US ABOUT YOURSELF

The next series of questions, Q7 through Q13, asks key demographic and socioeconomic questions about the respondents. Often, the response rate is lower for these questions as they ask for personal information. The following summarizes the responses to the "Tell us About Yourself" section of the survey.

**Q7.** Question 7 asks respondents how many vehicles are available in the household where they live. This provides a measure of choice riders who have other alternatives, versus captive riders that have no other option. There were 946 responses to this question. Figure 32 reveals 57 percent of FRED riders have no access to a vehicle. This is followed by 30 percent with only one vehicle in their household, which indicates much of FRED's ridership is captive. Table 20 shows the total and expanded responses by route type. The percentages vary depending on the route type. While 57 percent of the fixed route riders have no vehicle access, 72 percent of the FREDExpress riders have no vehicle and only two percent of the VRE Feeder service riders have no access to a vehicle. In fact, 39 percent of the VRE riders have access to two vehicles.

**Figure 32: Number of Vehicles in Household**

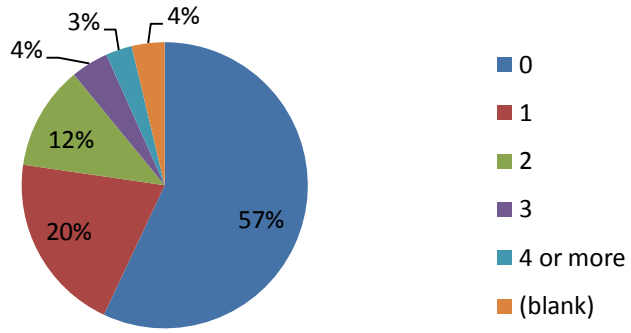



**Table 20: Number of Vehicles in Household**

| Number of Vehicles | Total Responses | Expanded Responses | | | |
|---|---|---|---|---|---|
| | | Fixed | FREDEX | VRE Feeder | Grand Total |
| **0** | 506 | 1,078 | 188 | 1 | 1,268 |
| **1** | 217 | 422 | 14 | 16 | 452 |
| **2** | 133 | 211 | 26 | 25 | 262 |
| **3** | 56 | 66 | 13 | 15 | 94 |
| **4 or more** | 34 | 51 | 9 | 7 | 66 |
| **(blank)** | 36 | 70 | 11 | 1 | 83 |
| **Grand Total** | **982** | **1,898** | **261** | **65** | **2,224** |

**Q8.** Question 8 asks if respondents have a valid driver's license. Only 34 percent of the FRED riders have a valid driver's license, as shown in Figure 33. This is another indicator of choice versus captive riders. Table 21 shows the total and expanded responses by route type. Sixty-one percent of the fixed route riders do not have a driver's license; whereas, 54 percent of FREDExpress riders do not have one. All of the VRE Feeder service riders responded that they have a driver's license (96%) or did not answer the question.

**Figure 33: Driver's License**

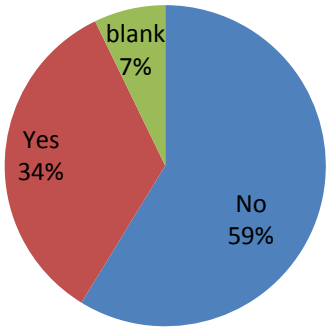



**Table 21: Driver's License**

| Drivers License | Total Responses | Expanded Responses | | | |
|---|---|---|---|---|---|
| | | Fixed | FREDEX | VRE Feeder | Grand Total |
| **No** | 566 | 1,166 | 141 | | 1,307 |
| **Yes** | 352 | 593 | 102 | 63 | 758 |
| **(blank)** | 64 | 139 | 19 | 2 | 160 |
| **Grand Total** | **982** | **1,898** | **261** | **65** | **2,224** |

**Q9.** Question 9 asks respondents their gender. Forty-nine percent of FRED riders are female, as shown in Figure 34. Table 22 shows the total and expanded results for the all types of FRED service. Fifty-nine percent of FREDExpress riders are female, compared to 48 percent of the riders on fixed route service and 38 percent on the VRE feeder service.

**FIGURE 34: GENDER**

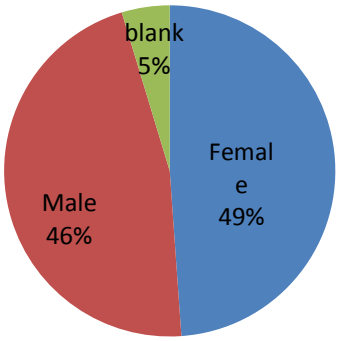



**Table 22: Gender**

| Gender | Total Responses | Expanded Responses | | | |
|---|---|---|---|---|---|
| | | Fixed | FREDEX | VRE Feeder | Grand Total |
| **Female** | 459 | 910 | 153 | 25 | 1,087 |
| **Male** | 476 | 897 | 96 | 39 | 1,033 |
| **(blank)** | 47 | 91 | 12 | 1 | 104 |
| **Grand Total** | **982** | **1,898** | **261** | **65** | **2,224** |

**Q10.** Question 10 asks respondents about their employment/student status. Figure 35 shows the total expanded results for all FRED service. Thirty-three percent of FRED riders are employed full time, followed by 26 percent that are unemployed and 17 percent that are only employed part-time. Table 23 shows the total and expanded results for all FRED route types. Although 34 percent of the FRED fixed route riders are employed full time, only 14 percent of the FREDExpress riders are full time employees. Thirty-three percent of the FREDExpress riders are unemployed and 23 percent are college students. All of the riders on the VRE Feeder service are employed full-time.

**Figure 35: Employment Status**

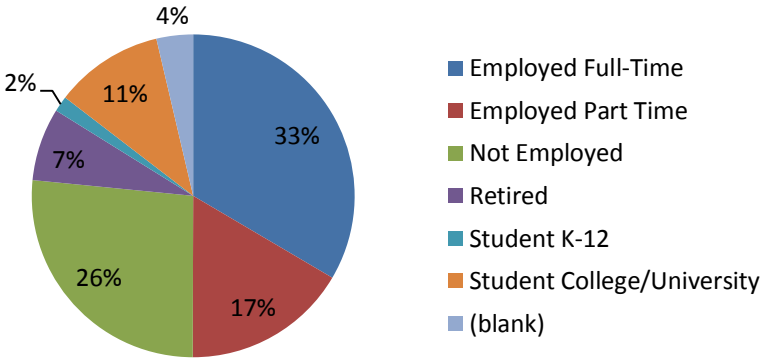



**Table 23: Employment Status**

| Employment Status | Total Responses | Expanded Responses | | | |
|---|---|---|---|---|---|
| | | Fixed | FREDEX | VRE Feeder | Grand Total |
| **Employed Full-Time** | 351 | 643 | 37 | 64 | 744 |
| **Employed Part Time** | 165 | 338 | 31 | | 369 |
| **Not Employed** | 229 | 504 | 85 | | 590 |
| **Retired** | 76 | 134 | 29 | | 162 |
| **Student K-12** | 18 | 30 | 5 | | 35 |
| **Student College/University** | 105 | 182 | 60 | | 243 |
| **(blank)** | 38 | 67 | 14 | 1 | 82 |
| **Grand Total** | **982** | **1,898** | **261** | **65** | **2,224** |

**Q11.** Question 11 asks respondents, "What is your Age?" Thirty-five percent of all FRED riders are age 40 to 59 and 30 percent are age 25 to 39, as shown in Figure 36. Table 24 shows the total and expanded responses by route type. Fixed route riders are more likely to be between the ages of 40 to 59 (36%) and 25 to 39 (31%). Thirty-two percent of FREDExpress riders are age 19 to 24, which is expected given the student focus of these routes. The second highest age group on FREDExpress includes riders age 25 to 39 (26%). Seventy-six percent of VRE Feeder Service riders are age 40 to 59, followed by 14 percent age 60 and over.

**Figure 36: Age**

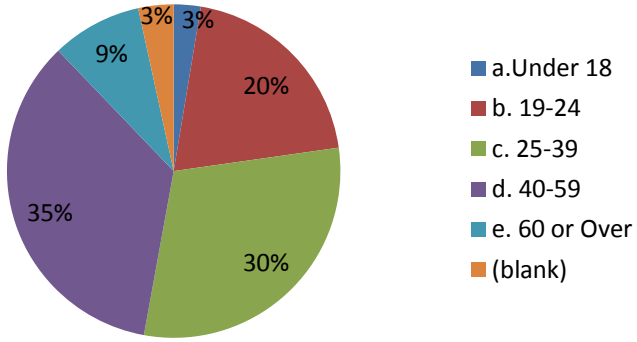



**Table 24: Age**

| Age | Total Responses | Expanded Responses | | | |
|---|---|---|---|---|---|
| | | Fixed | FREDEX | VRE Feeder | Grand Total |
| **Under 18** | 26 | 40 | 19 | | 58 |
| **19-24** | 198 | 363 | 85 | | 448 |
| **25-39** | 282 | 598 | 68 | 4 | 670 |
| **40-59** | 352 | 681 | 47 | 49 | 778 |
| **60 or Over** | 95 | 150 | 35 | 9 | 194 |
| **(blank)** | 29 | 67 | 7 | 2 | 76 |
| **Grand Total** | **982** | **1,898** | **261** | **65** | **2,224** |

**Q12**. Question 12 asks respondents about their household income. This question typically has the lowest response rate, as is the case with the FRED survey, with only 800 responses (81%). Among those that did provide an answer, 61 percent of all FRED riders make $19,999 or less, followed by 21 percent earning $20,000 to $39,000, as shown in Figure 37. This is 49 percent with the unanswered responses included. Table 25 shows the total and expanded responses for each route type. With 22 percent of the FREDExpress riders leaving this question blank, 59 percent earn $19,999 or less. VRE Feeder service riders, on the other hand, earn $80,000 or more (54%) with 17 percent of the riders not disclosing their income.

**Figure 37: Household Income**

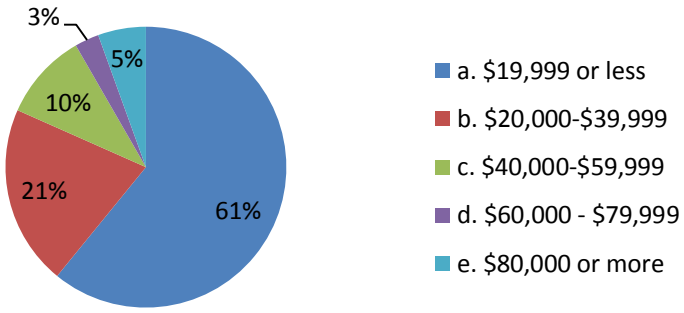


**Table 25: Household Income**

| Household Income | Total Responses | Expanded Response | | | |
|---|---|---|---|---|---|
| | | Fixed | FREDEX | VRE Feeder | Grand Total |
| a. $19,999 or less | 457 | 944 | 153 | | 1,097 |
| b. $20,000-$39,999 | 167 | 349 | 23 | 1 | 374 |
| c. $40,000-$59,999 | 88 | 159 | 14 | 8 | 181 |
| d. $60,000 - $79,999 | 32 | 35 | 7 | 9 | 50 |
| e. $80,000 or more | 56 | 58 | 7 | 35 | 99 |
| (blank) | 182 | 355 | 57 | 11 | 423 |
| **Grand Total** | **982** | **1,898** | **261** | **65** | **2,224** |

**Q13**. Question 13 asks respondents, "Is your first language a language other than English?" As shown in Figure 38, 77 percent of FRED riders originally speak English, followed by 17 percent whose first language is a language other than English. Among the responses, 35 percent of the FRED passengers who speak English as a second language speak Spanish. Table 26 shows the percentage of foreign language speakers by route type. Twenty-one percent of the FREDExpress riders do not speak English as their primary language, compared to 16 percent of the fixed route riders. In addition to Spanish (6.3%), the remaining top five languages spoken by all FRED riders include French (.5%), Korean (.5%), German (.3%) and Arabic (.2%).

**Figure 38: Primary Language Is a Language Other Than English**

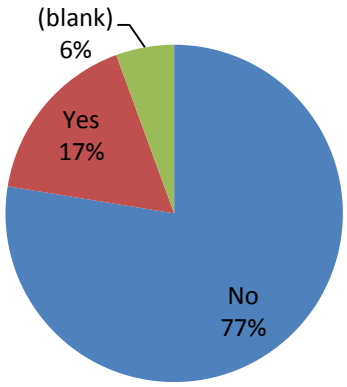



**Table 26: Primary Language is Language Other Than English**

| Primary Language Other than English | Total Responses | Expanded Responses | | | |
|---|---|---|---|---|---|
| | | Fixed | FREDEX | VRE Feeder | Grand Total |
| **No** | 761 | 1,487 | 186 | 52 | 1,725 |
| **Yes** | 165 | 307 | 56 | 12 | 375 |
| **(blank)** | 56 | 104 | 19 | 1 | 124 |
| **Grand Total** | **982** | **1,898** | **261** | **65** | **2,224** |

## SECTION III: TELL US HOW WE CAN MAKE FRED BETTER

The last part of the survey asks Respondents to "Tell us how we can make FRED better." There were 515 surveys with comments that included frequency, bus stop location and amenities, cleanliness, span of service, weekend service, and new service needs, among other. The following is a listing of all responses from the surveys.

Be able to wave down bus
1 hour at least
10 cents/ ride
609 and IGO Rd. Would be nice to put a stop (wide area) - has to walk down 609 after work to get home
A bus to go to Northern VA
A full time express bus to Central Park daily and on weekends
A great help
A stop near Jersey PO - 15 minutes ride to nearest Fred stop
Air freshener
All Day rate
All good
All locations on weekends
Allow 5 minutes wait time at stops
Allow small pets
An express to go to mall better
Austin bad driver
Be consistent with VRE
Be friendly
Be on time
Be on time at Central Park
Be on time/run Saturdays
Benches at stops
Benches at stops for long waits
Benches out at Staples shop; drivers are very nice and friendly
Better access for retired and persons with children
Better arrival times/run weekends
Better than Hawaii bus system
Better times
Better times/more punctual
Better times/weekends
Bigger bus
Broaden traveling areas
Bus comes every 30 minutes. Febreaze!
Bus every 30 minute
Bus every hour to Germanna
Bus from jail to Fred Central on weekends will pay more
Bus on weekends

Bus smelly at times; drivers nice and friendly and knowledgeable
Bus stop at Clearview Heights
Bus stops at Cosner's Corners
Bus to come by every 30 minutes
Bus to massaponax shopping center
Buses a little small - drivers nice and helpful
Buses could be cleaner - has an odor - go green update bus lane
Buses need to run longer hours during the week
Buses on weekends
Buses to Massaponax shopping center
Buses are great!
Buses are late
Buses every hour
Buses should not leave stop prior to scheduled pick up time
Buses too early for 4PM shifts
Butch is great driver
By getting where I need to go
Change at bottom dollar stop again
Connect Fred bus with Omni link from Stafford through Dumfries and North VA
Connect to PWC
Contain ride
Convenient
Could not do without it - I will miss the weekend buses
Covered benches/run weekends
Covered bus stops/more rural areas
Covered shelters/run weekends/more space for power chairs
D2 bus should go pass Geico to Hardwood Elementary
D3 to run later to coincide with D5
Direct routes/run weekends
Discount for students
Do not discontinue the Cowan or express
Do not like long wait to change buses at Fred Central - need weekend buses
Don’t change a thing
Don't let drunks on bus - everyone nice and helpful
Don't ride enough to evaluate
Don't ride often enough, but seems ok
Drive thru the complex of England Run North
Driver is really sweet
Driver would not let me on bus 10 sec late
Drivers need to know other routes, dirty buses
Drivers should be friendlier to the riders
Drop fair down to .25 again
Earlier

Earlier buses to Geico
Earlier buses
Earlier departure times
Earlier routes
Earlier times
Early 6am bus
Early and late bus
Early routes/more routes
Early times/ weekends
Early/late hours and run weekends
Easier to read schedules/buses every hour
Easier transfers
Easy access/very nice
Easy to read schedules/buses every hour
Easy to read schedules/more frequent/weekends
Employees have bad attitude
Establish 2 or 3 bus stops at Cosner's corner Shopping Center
Eve trip back to Salem Fields/run longer
Evening long waits for shuttle
Every 30 minutes
Every hour to GCC
Every hour/run weekends
Every other Saturday
Everything good. Nice drivers
Everything was fine
Expand KG service
Expand services on weekends
Extend D5 bus for work-release program b/c taxis $25 after 6. Get funding from RRJ for this purpose.
Extend time of D1 two hours
Extend weekend routes
Extend weekend/summer hours/King George later than 10 PM
Extended hours
F1 to Moss Free clinic
F2 longer hours and on weekend
Fare to .25 again
Faster, less money for passes
Fine
Fine the way it is
First time rider
Fred is better than metro shorter routes and less deaths
FRED is fine
Fred is great
Fred is operating professionally

Fred needs to have a bus stop around where the new Walmart is on route 17 asap.
Friendlier bus drivers
Get more bus stops and have bus go down route 1 to Caroline Court
Get to GCC earlier
Give drivers a raise
Give free transfers and have bus work on weekends
Go further North on Rt 1
Good
Good service
Good service and progress
GPS on bus for dispatch
Grateful for service
Great learning experience for students
Great - thanks!
Great bus system
Great job
GREAT!
Greyhound personnel are rude-i.e. Ralph and Ray
Had stroke - stop at my gate to pick up - hard to walk far with bags
Have 2 buses on every line
Have a bus run near amylase maybe where subway is
Have a bus stop at Wallace St or let the bus stop at Bottom Dollar
Have bus go straight to Central Park, not Route 1 first
Have bus go up 17 on weekends (homeless - panhandle to make money for room)
Have earlier routes in the am and later routes at night; have weekend service more often
Have Fred run 30 minutes; more benches; more surveys; helpful drivers; 540-229-8889
Have S2 come every hour in Spots
Helpful drivers
Hit every stop/call out stops
Homeless - panhandle to make money for room
Hourly bus
Hourly service/weekends
I love Fred
I ride everyday
If bus is early to the stop, bus should wait on passengers to arrive
If Fred would stop in Thornburg - be available on weekends to all routes
Improve for more than one hour for it's converting a city
Improve Stops
Inconsistent stops
Increase other bus for F4 because we wait a long time. Please increase other bus
It can be an excellent service if frequencies added
It is fine to me
It is very affordable

It is wonderful as is. Lost without it.
It would be nice to have pick up in Ashland
Keep rolling
Keep up good work
Keep up the good work
Kilarny Dr on weekends
Late night runs for students at Strover
Later buses
Later hours
Later hours/run weekends
Later weekend hours
Leave front seats for handicapped
Less time b/w stops
Less walking distance/transfers
Less walking distances and less transferring
Let people eat on the bus
Let people know bus stop in Thornburg is there
Like it the way it is
Loitering people at the station should be removed
Longer hours
Longer hours for all routes and weekend service to all routes
Longer hours in PM
Longer hours, during evening, earlier in morning (6:30 am); bigger buses; distance between bus stops closer
Longer hours/ weekends
Longer hours/more buses/more stops
Longer hours/weekends
Longer PM hours
Longer running hours and more buses on major routes for faster pick ups
Longer times for transit
Longer transfer time
Longer transfer times/run later
Love it
Low fares/every hour
Lower fare to .25
Lower fares
Lower the VRE fare? - get a bigger bus for trips home on VRE route
Make another stop before you get to Drew Middle School on a rainy day. (Stop where you get stubs at Treslow Rd.)
Make available to all train departures include VRE 302
Make early routes in order to get a full time job
Make it run every hour on Fridays as well
Make more routes in Spotsylvania Co. No shops around Todd's Tavern.

Make the fare .25 again
More benches for people to sit at the stops
More bus
More bus stops opposite end of the road, stops are too far apart
More bus stops, less transfers
More bus trips to DMV
More bus/cheaper fare/free transfer
More buses going to more places
More buses more often and on weekend
More buses on routes
More buses on routes/less time b/w runs
More buses please
More buses, longer distances, more stops and longer running time
More buses/earlier
More buses/later buses
More buses/more stops
More buses/stop more often
More buses
More buses per hour
More buses/extend hours
More buses/run later
More convenient stops/earlier buses
More courteous drivers
More direct routes
More frequent stops
More frequent stops at Germanna
More frequent stops, hourly trips, weekend schedule
More often - love the service - driver is excellent
More routes and more stops
More routes in North Stafford, free rides for students, more weekend routes
More routes in residential zones
More runs past 7PM
More schedules in waiting area/bus stop
More seats
More seats on the bus
More service to King George and weekends
More service trips between Fredericksburg and King George each day and on weekends; don't raise fares
More stops
More stops in Spots/shorter wait times
More stops on 301 south/weekend service
More stops on route
More stops rat 1 Garrisonville

More stops to Dahlgren
More stops would really help. Earlier start times. Weekend service
More stops, discount senior fares
More stops, more routes, longer bus service, some drivers discriminate - discipline
More stops, run later
More stops/longer hours
More stops/run weekends
More than once/hour and later on weekends
More than one bus/ route
More trips per day from Fredericksburg and King George and weekends; don't increase fares
Most jobs in Central Park - run buses later - doesn't make sense to have bus take you to work but not after work
Need a bus stop close to American Fitness Gym in Southpoint II. It would a closer walk to my job than Walmart.
Need bus to courthouse road to VRE
Need buses at Lake Anna and Spotsylvania County near Brock Rd
Need FREDExpress year round throughout summer
Need more stops in Cernum areas
Need stop in Chatham Square
Need to get around faster at less 30 minutes
Nice and clean
Night and weekend service
No complaints
Normally ride bike
Not make them run every hour
OK
On time rides - if running ahead of time - wait until time
Overlap bus pickup time
Phone # and Route pick up times on bus signs
Please come on time
Please operate D5 on the weekends at least Saturday; operate an hour earlier in morning
Price back to $.25
Price back to.25
Provide disabled w/ 4-5 rides/day to keep busy
Pull into Hazel Hill apartment so rider doesn't have to walk 2 blocks
Put a bus stop at Leland station or train station across from elementary school
Put a stop at Perms
Put benches at stops
Put crosswalk on Route 1 at Fred Station for safety. 1 or 2 stops on Stafford D-2 line.
Put stop after Geico and before Old Forge on South Rt. 17.
Put stop between Gideon and Ballantraye - make trips to K.G. more frequent and hourly
Quicker
Quicker times

Radio too loud
Really like bus driver
Rebuild them (old ones and hire more Fredericks)
Reduce to $.25 trip. I take the Fred less now than I used to.
Respect people
Ride all day on weekends
Right on time
Routes in Spotsylvania County and Lake Anna/run weekends
Run 1 hour after 4
Run 7 days a week all the time. Not just on college kids schedule
Run all routes on weekend
Run an extra hour or two later
Run at least half days on holidays for people that have to work
Run buses every 15 minutes
Run buses every 30 minutes
Run buses more often
Run earlier in Stafford/run every 30 minutes
Run earlier to Stafford County and on weekends.
Run early/late and more stops
Run early/late hours
Run every 20-30 minutes
Run every 30 minutes
Run every hour until 5 or 6
Run Fred an hour later and let GCC ride free or .25 because students
Run Fred on weekends
Run it on Saturday
Run later
Run later 6:30/run weekends
Run later and on weekends
Run later at night
Run later hours
Run later in Garrisonville/run weekends
Run later in Stafford/run weekends Fred.
Run later on evenings; F4 round-trip; F1 - F4 both buses in evening; run weekends
Run later on weekends
Run later/run weekends
Run later; turn the music down
Run more frequently/run weekends
Run more often
Run on Saturdays
Run on the weekends during the summer when college is out
Run on weekends
Run on weekends

Run on weekends and add more buses to homeless shelter and add buses; run to Quantico base
Run on weekends more; run later in town
Run Saturdays
Run Sundays/more than one pass/ day
Run the FREDExpress to the Wawa on weekends
Run until 2AM
Run till 9:30 or 10:00; run at least 12 hours on weekends
Run weekend hours same as weekday
Run weekend route year round;
Run weekends
Run weekends to Walmart; on some Saturdays, twice a month
Run weekends, more passes
Run weekends/more often
S2 every hour
S2 every hour to Germanna/free student fares/weekend/more north Stafford routes
Separate routes for the two loops of S2
Service earlier
Service in King George past 4 pm on weekends
Service on weekends
Shorten arrival time
Shorter bus waits
Shorter destination time
Shorter routes
Sometimes the Fred skips a few stops at Central Park
Spots buses should run every hour
Start a little earlier
Start around 6 am until 9:30 pm
Start D5 an hour earlier in the morning Mon. - Friday. Have D5 run on Saturday
Start earlier in am and later than 4 pm and add Saturday
Start routes earlier and run later
Start sooner and end later
Stop at church off of commons
Stop at Food Lion
Stop at King George HS
Stop at Wendy's Southpoint Blvd
Stop closer to Adair St
Stop closer to my work; make more routes; make monthly pass cheaper
Stop D2 just past Falmouth Bridge
Stop D4 at Stafford Courthouse or D3 further down 610
Stop further down Onville Rd
Stop on Ebenezer/run later
Stop on Gideon Ct/Ballard Rd
Stop on Hickory Ridge Rd

Stop on Mine Rd/four Mile Fork
Stop the hanging out in the station
Stops on Southbound side of Hwy 17 N
Student discounts
Student fares/weekends/North Stafford-more routes
Surveyor refused
The bus is late in Stafford
They are on time and it is good transportation
To Washington Dc every day
Tokens or passes
Too much time b/w buses/no bus to Ruther Glen in evening/consistent times on weekends
Transfers
Transfers less confusing
Travel later than in Stafford
Turn up AC
Two S2 buses
VRE feeder must run when VRE is open/larger buses
Wait too long for bus
Wave down buses
Wave down policy
Weekend and night service
Weekend bus for riders not on FREDExpress line
Weekend bus to and from GCC
Weekend bus to Stafford/more routes to N Woodbridge, Dumfries, central
Weekend buses
Weekend everywhere; later night
Weekend service in Spotsylvania
Weekend service increase
Weekend services - more Thurman Brisben buses
Weekend/more stops
Weekends
Weekends extended hours
Weekends route and longer on these routes
Weekends/later at night
Weekends/longer hours/lower fare/weekly rate
Weekends/rural areas
Weekends in Lee's Hill
Wish you ran nights but would raise the fare
Would like bus to stop at house because he had a stroke and hard to walk
Year round bus service/weekends/every 15 minutes

# APPENDIX D: TRIENNIAL REVIEW FINAL REPORT & CLOSEOUT LETTER

# APPENDIX E: PROPOSED SERVICE STATISTICS

**Table F.1: FY2011 Recommended Weekday Service Statistics**

| Rte. # | Route Pattern | Frequency | Daily Buses | Average Weekday Rev. Hrs. | Average Weekday Rev. Miles | Annual Rev. Hours | Annual Rev. Miles |
|---|---|---|---|---|---|---|---|
| F1 | FRED Central to Spotsylvania Towne Centre | 60 | 1.0 | 11 | 138 | 2,805 | 35,091 |
| F2 | FRED Central to Cosner's Corner Via J.D.H | 60 | 1.0 | 13 | 174 | 3,315 | 44,454 |
| F3 | FRED Central to Lees Hill Center Via Lafayette | 60 | 1.0 | 13 | 187 | 3,315 | 47,736 |
| F4 | FRED Central -Central Park | 60 | 1.0 | 11 | 141 | 2,805 | 35,904 |
| | FRED Central - River Club | 60 | 1.0 | 12 | 146 | 3,060 | 37,148 |
| F5 | FRED Central - The Downtown Loop | 60 | 1.0 | 12 | 121 | 3,060 | 30,906 |
| S1 | Cosner's Corner - Spotsylvania Towne Centre | 60 | 2.0 | 20 | 321 | 5,100 | 81,855 |
| S2b | Lees Hill Center - Marshall Center | 120 | 0.5 | 6 | 115 | 1,530 | 29,376 |
| S2a | Lees Hill Center - Germanna College | 120 | 0.5 | 6 | 79 | 1,530 | 20,196 |
| S3 | Ukrops to YMCA | 120 | 1.0 | 12 | 187 | 3,060 | 47,583 |
| D1 | Southern Stafford - Train Station - YMCA | 60 | 1.0 | 10 | 202 | 2,550 | 51,510 |
| D2 | Southern Stafford - FRED Central - GEICO | 60 | 1.0 | 12 | 194 | 3,060 | 49,572 |
| D3 | Stafford Courthouse - Aquia Towne Center | 60 | 1.0 | 11 | 121 | 2,805 | 30,939 |
| D4 | Stafford Marketplace - Porter Library | 60 | 1.0 | 8 | 109 | 2,040 | 27,907 |
| D5 | FRED Central to Stafford Courthouse | 60 | 1.0 | 12 | 262 | 3,060 | 66,708 |
| D6 | Stafford County Express - North/South VDOT | 12 | 0.0 | 4 | 40 | 1,020 | 10,200 |
| C1 | FRED-Bowling Green-Carmel Church-Ladysmith | 120 | 1.0 | 10 | 340 | 2,550 | 86,700 |
| C2 | FRED Central-CSC/DSS-Dawn Center/Port Royal | 120 | 1.0 | 8 | 153 | 2,040 | 39,127 |
| K1 | FRED Central - King George Shopping Center | 120 | 1.0 | 12 | 360 | 3,060 | 91,777 |
| K2 | FRED Central - The Shops at King George | 60 | 1.0 | 4 | 152 | 1,020 | 38,760 |
| VF1 | VRE Feeder-Idlewild-Train Station | Varies | 1.0 | 9 | 64 | 2,295 | 16,218 |
| VF2 | VRE Feeder - Cowan Blvd.-Train Station | Varies | 0.0 | 6 | 44 | 1,530 | 11,322 |
| VS1 | VRE Feeder - Gordon Rd-Ukrops-Train Station | Varies | 2.0 | 13 | 88 | 3,188 | 22,542 |
| **TOTALS** | | | **22.0** | **235** | **3,739** | **59,798** | **953,532** |

| FREDEXPRESS Rte. # | Route Pattern | Frequency | Daily Buses | Average Weekday Rev. Hrs. | Rev. Miles | Total Rev. Hours | Total Rev. Miles |
|---|---|---|---|---|---|---|---|
| M2 | UMW/Central Park/Spotsylvania TC | 60 | 1 | 3 | 29 | 198 | 1,903 |
| **Thur/Fri** | | | **1** | **3** | **29** | **198** | **1,903** |
| M3 | UMW/Downtown/Central Park Late Night | 60 | 1 | 3 | 34 | 99 | 1,113 |
| **Fri** | | | **1** | **3** | **34** | **99** | **1,113** |

**Table F.2: FY2011 Recommended Saturday Service Statistics**

| Rte. # | Route Pattern | Frequency | Daily Buses | Average Saturday Rev. Hrs. | Rev. Miles | Annual Rev. Hours | Annual Rev. Miles |
|---|---|---|---|---|---|---|---|
| M1 | Downtown/Central Park/Fall Hill/FRED | 60 | 1 | 13 | 158 | 429 | 5,217 |
| M2 | UMW/Central Park/Spotsylvania TC | 60 | 1 | 13 | 125 | 429 | 4,123 |
| M3 | UMW/Downtown/Central Park Late Night | 60 | 1 | 3 | 34 | 99 | 1,113 |
| **FRED Express TOTALS** | | | **3** | **29** | **317** | **957** | **10,452** |
| ***Saturday Total*** | | | ***3*** | ***29*** | ***29*** | ***957*** | ***10,452*** |

**Table F.3: FY2011 Recommended Sunday Service Statistics**

| Rte. # | Route Pattern | Frequency | Daily Buses | Average Sunday Rev. Hrs. | Rev. Miles | Annual Rev. Hours | Annual Rev. Miles |
|---|---|---|---|---|---|---|---|
| M1 | Downtown/Central Park/Fall Hill/FRED | 60 | 1 | 9 | 109 | 297 | 3,612 |
| M2 | UMW/Central Park/Spotsylvania TC | 60 | 1 | 9 | 86 | 297 | 2,854 |
| **FRED Express TOTALS** | | | **2** | **18** | **196** | **594** | **6,466** |
| ***Sunday Total*** | | | ***2*** | ***18*** | ***36*** | **594** | **6,466** |

**Table F.4: FY2012 Recommended Weekday Service Statistics**

| Rte. # | Route Pattern | Frequency | Daily Buses | Average Weekday Rev. Hrs. | Average Weekday Rev. Miles | Annual Rev. Hours | Annual Rev. Miles |
|---|---|---|---|---|---|---|---|
| F1 | FRED Central to Spotsylvania Towne Centre | 30 | 2 | 28 | 289 | 7,140 | 73,685 |
| F2 | FRED Central to Cosner's Corner Via J.D.H | 60 | 1 | 13 | 210 | 3,315 | 53,670 |
| F3 | FRED Central to Lees Hill Center Via Lafayette | 30 | 2 | 30 | 432 | 7,650 | 110,160 |
| F4 | FRED Central -Central Park | 30 | 2 | 30 | 384 | 7,650 | 97,920 |
| | FRED Central - River Club | 30 | 2 | 30 | 364 | 7,650 | 92,871 |
| F5 | FRED Central - The Downtown Loop | 30 | 2 | 28 | 283 | 7,140 | 72,114 |
| S1 | Cosner's Corner - Spotsylvania Towne Centre | 30 | 4 | 44 | 698 | 11,220 | 177,949 |
| S2 | Lees Hill Center - Marshall Center | 60 | 1 | 14 | 294 | 3,570 | 74,899 |
| | Lees Hill Center - Germanna College | 60 | 1 | 14 | 208 | 3,570 | 53,157 |
| S3b | Spots. Towne Centre to Courtland Commons | 60 | 2 | 24 | 335 | 6,120 | 85,496 |
| D1 | Southern Stafford - Train Station - YMCA | 60 | 1 | 10 | 202 | 2,550 | 51,510 |
| D2 | Southern Stafford - FRED Central - GEICO | 60 | 1 | 12 | 194 | 3,060 | 49,572 |
| D3 | Stafford Courthouse - Aquia Towne Center | 30 | 2 | 28 | 309 | 7,140 | 78,754 |
| D4 | Stafford Marketplace - Porter Library | 60 | 1 | 8 | 109 | 2,040 | 27,907 |
| D5 | FRED Central to Stafford Courthouse | 30 | 2 | 28 | 610 | 7,140 | 155,652 |
| D6 | Stafford County Express - North/South VDOT | 12 | 0 | 4 | 40 | 1,020 | 10,200 |
| C1 | FRED-Bowling Green-Carmel Church-Ladysmith | 120 | 1 | 10 | 340 | 2,550 | 86,700 |
| C2 | FRED Central-CSC/DSS-Dawn Center/Port Royal | 120 | 1 | 8 | 153 | 2,040 | 39,127 |
| K1 | FRED Central - King George Shopping Center | 120 | 1 | 12 | 360 | 3,060 | 91,777 |
| K2 | FRED Central - The Shops at King George | 60 | 1 | 4 | 152 | 1,020 | 38,760 |
| VF1 | VRE Feeder-Idlewild-Train Station | Varies | 1 | 9 | 64 | 2,295 | 16,218 |
| VF2 | VRE Feeder - Cowan Blvd.-Train Station | Varies | 0 | 6 | 44 | 1,530 | 11,322 |
| VS1 | VRE Feeder - Gordon Rd-Ukrops-Train Station | 30 | 2 | 13 | 88 | 3,188 | 22,542 |
| **TOTALS** | | | **33** | **407** | **6,165** | **103,658** | **1,571,963** |

| Rte. # | Route Pattern | Frequency | Daily Buses | Average Weekday Rev. Hrs. | Average Weekday Rev. Miles | Annual Rev. Hours | Annual Rev. Miles |
|---|---|---|---|---|---|---|---|
| M2 | UMW/Central Park/Spotsylvania TC | 60 | 1 | 3 | 29 | 198 | 1,903 |
| **Thur/Fri** | | | **1** | **3** | **29** | **198** | **1,903** |
| M3 | UMW/Downtown/Central Park Late Night | 60 | 1 | 3 | 34 | 99 | 1,113 |
| **Fri** | | | **1** | **3** | **34** | **99** | **1,113** |

**Table F.5: FY2012 Recommended Saturday Service Statistics**

| Rte. # | Route Pattern | Frequency | Daily Buses | Average Saturday Rev. Hrs. | Average Saturday Rev. Miles | Annual Rev. Hours | Annual Rev. Miles |
|---|---|---|---|---|---|---|---|
| M1 | Downtown/Central Park/Fall Hill/FRED | 60 | 1 | 13 | 158 | 429 | 5,217 |
| M2 | UMW/Central Park/Spotsylvania TC | 60 | 1 | 13 | 125 | 429 | 4,123 |
| M3 | UMW/Downtown/Central Park Late Night | 60 | 1 | 3 | 34 | 99 | 1,113 |
| **FRED Express TOTALS** | | | **3** | **29** | **317** | **957** | **10,452** |
| ***Saturday Total*** | | | ***3*** | ***29*** | ***29*** | ***957*** | ***10,452*** |

**Table F.6: FY2012 Recommended Sunday Service Statistics**

| Rte. # | Route Pattern | Frequency | Daily Buses | Average Sunday Rev. Hrs. | Average Sunday Rev. Miles | Annual Rev. Hours | Annual Rev. Miles |
|---|---|---|---|---|---|---|---|
| M1 | Downtown/Central Park/Fall Hill/FRED | 60 | 1 | 9 | 109 | 297 | 3,612 |
| M2 | UMW/Central Park/Spotsylvania TC | 60 | 1 | 9 | 86 | 297 | 2,854 |
| **FRED Express TOTALS** | | | **2** | **18** | **196** | **594** | **6,466** |
| ***Sunday Total*** | | | ***2*** | ***36*** | ***72*** | ***594*** | ***6,466*** |

**Table F.7: FY2013 Recommended Weekday Service Statistics**

| Rte. # | Route Pattern | Frequency | Daily Buses | Average Weekday Rev. Hrs. | Average Weekday Rev. Miles | Annual Rev. Hours | Annual Rev. Miles |
|---|---|---|---|---|---|---|---|
| F1 | FRED Central to Spotsylvania Towne Centre | 30 | 2 | 28 | 289 | 7,140 | 73,685 |
| F2 | FRED Central to Cosner's Corner Via J.D.H | 60 | 1 | 15 | 243 | 3,825 | 61,927 |
| F3 | FRED Central to Lees Hill Center Via Lafayette | 30 | 2 | 30 | 432 | 7,650 | 110,160 |
| F4 | FRED Central -Central Park | 30 | 2 | 30 | 384 | 7,650 | 97,920 |
| | FRED Central - River Club | 30 | 2 | 30 | 364 | 7,650 | 92,871 |
| F5 | FRED Central - The Downtown Loop | 30 | 2 | 28 | 283 | 7,140 | 72,114 |
| *CV1* | *Celebrate Virginia Circulator* | *30* | *1* | *12* | *181* | *3,060* | *46,084* |
| S1 | Cosner's Corner - Spotsylvania Towne Centre | 30 | 4 | 44 | 698 | 11,220 | 177,949 |
| S2 | Lees Hill Center - Marshall Center | 60 | 1 | 14 | 294 | 3,570 | 74,899 |
| | Lees Hill Center - Germanna College | 60 | 1 | 14 | 208 | 3,570 | 53,157 |
| S3b | Spots. Towne Centre to Courtland Commons | 60 | 2 | 24 | 335 | 6,120 | 85,496 |
| S3a | Courtland Commons to Cosner's Corner | 60 | 1 | 12 | 136 | 3,060 | 34,762 |
| D1 | Southern Stafford - Train Station - YMCA | 60 | 1 | 12 | 242 | 3,060 | 61,812 |
| D2a | Southern Stafford - FRED Central - GEICO | 60 | 1 | 14 | 210 | 3,570 | 53,657 |
| D2b | Southern Stafford - FRED Central - English Village | 60 | 1 | 14 | 203 | 3,570 | 51,765 |
| D3 | Stafford Courthouse - Aquia Towne Center | 30 | 2 | 28 | 309 | 7,140 | 78,754 |
| D4 | Stafford Marketplace - Porter Library | 60 | 1 | 12 | 164 | 3,060 | 41,861 |
| D5 | FRED Central to Stafford Courthouse | 30 | 2 | 28 | 610 | 7,140 | 155,652 |
| D6 | Stafford County Express - North/South VDOT | 12 | 0 | 4 | 40 | 1,020 | 10,200 |
| C1 | FRED-Bowling Green-Carmel Church-Ladysmith | 120 | 1 | 10 | 340 | 2,550 | 86,700 |
| C2 | FRED Central-CSC/DSS-Dawn Center/Port Royal | 120 | 1 | 8 | 153 | 2,040 | 39,127 |
| K1 | FRED Central - King George Shopping Center | 120 | 1 | 12 | 360 | 3,060 | 91,777 |
| K2 | FRED Central - The Shops at King George | 60 | 1 | 4 | 152 | 1,020 | 38,760 |
| VF1 | VRE Feeder-Idlewild-Train Station | Varies | 1 | 9 | 64 | 2,295 | 16,218 |
| VF2 | VRE Feeder - Cowan Blvd.-Train Station | Varies | 0 | 6 | 44 | 1,530 | 11,322 |
| VS1 | VRE Feeder - Gordon Rd-Ukrops-Train Station | Varies | 2 | 13 | 88 | 3,188 | 22,542 |
| *VS2* | *VRE Feeder - Lee Park - Proposed VRE Station* | *Varies* | *1* | *10* | *81* | *2,486* | *20,553* |
| **TOTALS** | | | **37** | **464** | **6,909** | **118,384** | **1,761,724** |

| Rte. # | Route Pattern | Frequency | Daily Buses | Average Weekday Rev. Hrs. | Rev. Miles | Annual Rev. Hours | Annual Rev. Miles |
|---|---|---|---|---|---|---|---|
| M2 | UMW/Central Park/Spotsylvania TC | 60 | 1 | 3 | 29 | 198 | 1,903 |
| **Thur/Fri** | | | **1** | **3** | **29** | **198** | **1,903** |
| M3 | UMW/Downtown/Central Park Late Night | 60 | 1 | 3 | 34 | 99 | 1,113 |
| **Fri** | | | **1** | **3** | **34** | **99** | **1,113** |

**Table F.8: FY2013 Recommended Saturday Service Statistics**

| Rte. # | Route Pattern | Frequency | Daily Buses | Average Saturday Rev. Hrs. | Rev. Miles | Annual Rev. Hours | Annual Rev. Miles |
|---|---|---|---|---|---|---|---|
| F1 | FRED Central to Spotsylvania Towne Centre | 60 | 1 | 13 | 134 | 676 | 6,963 |
| F4 | FRED Central -Central Park | 60 | 1 | 13 | 166 | 676 | 8,653 |
| | FRED Central - River Club | 60 | 1 | 13 | 158 | 676 | 8,207 |
| CV1 | Celebrate Virginia Circulator | 30 | 1 | 13.0 | 195.8 | 676 | 10,181 |
| **FRED TOTALS** | | | **4** | **52** | **654** | **2,704** | **34,003** |
| M1 | Downtown/Central Park/Fall Hill/FRED | 60 | 1 | 13 | 158 | 429 | 5,217 |
| M2 | UMW/Central Park/Spotsylvania TC | 60 | 1 | 13 | 125 | 429 | 4,123 |
| M3 | UMW/Downtown/Central Park Late Night | 60 | 1 | 3 | 34 | 99 | 1,113 |
| **FRED Express TOTALS** | | | **3** | **29** | **317** | **957** | **10,452** |
| ***Saturday Total*** | | | ***7*** | ***81*** | ***971*** | ***3,661*** | ***44,455*** |

**Table F.9: FY2013 Recommended Sunday Service Statistics**

| Rte. # | Route Pattern | Frequency | Daily Buses | Average Sunday Rev. Hrs. | Rev. Miles | Annual Rev. Hours | Annual Rev. Miles |
|---|---|---|---|---|---|---|---|
| F1 | FRED Central to Spotsylvania Towne Centre | 60 | 1 | 9 | 93 | 468 | 4,820 |
| F4 | FRED Central -Central Park | 60 | 1 | 9 | 115 | 468 | 5,990 |
| | FRED Central - River Club | 60 | 1 | 9 | 109 | 468 | 5,682 |
| CV1 | Celebrate Virginia Circulator | 30 | 1 | 9.0 | 135.5 | 468 | 7,048 |
| **FRED TOTALS** | | | **4** | **36** | **453** | **1,872** | **23,540** |
| M1 | Downtown/Central Park/Fall Hill/FRED | 60 | 1 | 9 | 109 | 297 | 3,612 |
| M2 | UMW/Central Park/Spotsylvania TC | 60 | 1 | 9 | 86 | 297 | 2,854 |
| **FRED Express TOTALS** | | | **2** | **18** | **196** | **594** | **6,466** |
| **Sunday Total** | | | **6** | **54** | **649** | **2,466** | **30,006** |

**Table F.10: FY2014 Recommended Weekday Service Statistics**

| Rte. # | Route Pattern | Frequency | Daily Buses | Average Weekday Rev. Hrs. | Average Weekday Rev. Miles | Annual Rev. Hours | Annual Rev. Miles |
|---|---|---|---|---|---|---|---|
| F1 | FRED Central to Spotsylvania Towne Centre | 30 | 2 | 28 | 289 | 7,140 | 73,685 |
| F2 | FRED Central to Cosner's Corner Via J.D.H | 60 | 1 | 15 | 243 | 3,825 | 61,927 |
| F3 | FRED Central to Lees Hill Center Via Lafayette | 30 | 2 | 30 | 432 | 7,650 | 110,160 |
| F4 | FRED Central -Central Park | 30 | 2 | 30 | 384 | 7,650 | 97,920 |
| | FRED Central - River Club | 30 | 2 | 30 | 364 | 7,650 | 92,871 |
| F5 | FRED Central - The Downtown Loop | 30 | 2 | 28 | 283 | 7,140 | 72,114 |
| *F6* | *NEW-Idlewilde-Westwood S.C. - Fred Central* | *60* | *1* | *14* | *105* | *3,570* | *26,882* |
| *CV1* | *Celebrate Virginia Circulator* | *30* | *1* | *12* | *181* | *3,060* | *46,084* |
| S1 | Cosner's Corner - Spotsylvania Towne Centre | 30 | 4 | 44 | 698 | 11,220 | 177,949 |
| S2 | Lees Hill Center - Marshall Center | 60 | 1 | 14 | 294 | 3,570 | 74,899 |
| | Lees Hill Center - Germanna College | 60 | 1 | 14 | 208 | 3,570 | 53,157 |
| S3a | Spots. Towne Centre to Courtland Commons | 60 | 2 | 24 | 335 | 6,120 | 85,496 |
| S3b | Courtland Commons to Cosner's Corner | 60 | 1 | 12 | 136 | 3,060 | 34,762 |
| D1 | Southern Stafford - Train Station - YMCA | 60 | 1 | 12 | 242 | 3,060 | 61,812 |
| D2a | Southern Stafford - FRED Central - GEICO | 60 | 1 | 14 | 210 | 3,570 | 53,657 |
| D2b | Southern Stafford - FRED Central - English Village | 60 | 1 | 14 | 203 | 3,570 | 51,765 |
| D3 | Stafford Courthouse - Aquia Towne Center | 30 | 2 | 28 | 309 | 7,140 | 78,754 |
| D4 | Stafford Marketplace - Porter Library | 60 | 1 | 12 | 164 | 3,060 | 41,861 |
| D5 | FRED Central to Stafford Courthouse | 30 | 2 | 28 | 610 | 7,140 | 155,652 |
| D6 | Stafford County Express - North/South VDOT | 12 | 0 | 4 | 40 | 1,020 | 10,200 |
| C1 | FRED-Bowling Green-Carmel Church-Ladysmith | 120 | 1 | 10 | 340 | 2,550 | 86,700 |
| C2 | FRED Central-CSC/DSS-Dawn Center/Port Royal | 120 | 1 | 8 | 153 | 2,040 | 39,127 |
| K1 | FRED Central - King George Shopping Center | 120 | 1 | 12 | 360 | 3,060 | 91,777 |
| K2 | FRED Central - The Shops at King George | 60 | 1 | 4 | 152 | 1,020 | 38,760 |
| VF1 | VRE Feeder-Idlewild-Train Station | varies | 1 | 9 | 64 | 2,295 | 16,218 |
| VF2 | VRE Feeder - Cowan Blvd.-Train Station | varies | 0 | 6 | 44 | 1,530 | 11,322 |
| VS1 | VRE Feeder - Gordon Rd-Ukrops-Train Station | varies | 2 | 13 | 88 | 3,188 | 22,542 |
| *VS2* | *VRE Feeder - Lee Park - Proposed VRE Station* | *varies* | *1* | *10* | *81* | *2,486* | *20,553* |
| **TOTALS** | | | **38** | **478** | **7,014** | **121,954** | **1,788,606** |

| Rte. # | Route Pattern | Frequency | Daily Buses | Average Weekday Rev. Hrs. | Average Weekday Rev. Miles | Annual Rev. Hours | Annual Rev. Miles |
|---|---|---|---|---|---|---|---|
| M2 | UMW/Central Park/Spotsylvania TC | 60 | 1 | 3 | 29 | 198 | 1,903 |
| **Thur/Fri** | | | **1** | **3** | **29** | **198** | **1,903** |
| M3 | UMW/Downtown/Central Park Late Night | 60 | 1 | 3 | 34 | 99 | 1,113 |
| **Fri** | | | **1** | **3** | **34** | **99** | **1,113** |

**Table F.11: FY2014 Recommended Saturday Service Statistics**

| Rte. # | Route Pattern | Frequency | Daily Buses | Average Saturday Rev. Hrs. | Average Saturday Rev. Miles | Annual Rev. Hours | Annual Rev. Miles |
|---|---|---|---|---|---|---|---|
| F1 | FRED Central to Spotsylvania Towne Centre | 60 | 1 | 13 | 134 | 676 | 6,963 |
| F2 | FRED Central to Cosner's Corner Via J.D.H | 60 | 1 | 13 | 208 | 676 | 10,816 |
| F3 | FRED Central to Lees Hill Center Via Lafayette | 60 | 1 | 13 | 187 | 676 | 9,734 |
| F4 | FRED Central -Central Park | 60 | 1 | 13 | 166 | 676 | 8,653 |
| | FRED Central - River Club | 60 | 1 | 13 | 158 | 676 | 8,207 |
| F5 | Weekend Downtown Tourist Loop | 60 | 1 | 13 | 112 | 676 | 5,814 |
| CV1 | Celebrate Virginia Circulator | 30 | 1 | 13 | 195.8 | 676 | 10,181 |
| D2a | Southern Stafford - FRED Central - GEICO | 60 | 1 | 13 | 195 | 676 | 10,160 |
| D2b | Southern Stafford - FRED Central - English Village | 60 | 1 | 13 | 189 | 676 | 9,802 |
| D4 | Stafford Marketplace - Porter Library | 60 | 1 | 13 | 178 | 676 | 9,248 |
| S1 | Lees Hill Center - Spotsylvania Towne Centre | 60 | 1 | 13 | 412 | 676 | 21,443 |
| **FRED TOTALS** | | | **11** | **143** | **2,135** | **7,436** | **111,019** |
| M1 | Downtown/Central Park/Fall Hill/FRED | 60 | 1 | 13 | 158 | 429 | 5,217 |
| M2 | UMW/Central Park/Spotsylvania TC | 60 | 1 | 13 | 125 | 429 | 4,123 |
| M3 | UMW/Downtown/Central Park Late Night | 60 | 1 | 3 | 34 | 99 | 1,113 |
| **FRED Express TOTALS** | | | **3** | **29** | **317** | **957** | **10,452** |
| ***Saturday Total*** | | | ***14*** | ***172*** | ***2,452*** | ***8,393*** | ***121,472*** |

**Table F.12: FY2014 Recommended Sunday Service Statistics**

| Rte. # | Route Pattern | Frequency | Daily Buses | Average Sunday Rev. Hrs. | Average Sunday Rev. Miles | Annual Rev. Hours | Annual Rev. Miles |
|---|---|---|---|---|---|---|---|
| F1 | FRED Central to Spotsylvania Towne Centre | 60 | 1 | 9 | 93 | 468 | 4,820 |
| F2 | FRED Central to Cosner's Corner Via J.D.H | 60 | 1 | 9 | 144 | 468 | 7,488 |
| F3 | FRED Central to Lees Hill Center Via Lafayette | 60 | 1 | 9 | 130 | 468 | 6,739 |
| F4 | FRED Central -Central Park | 60 | 1 | 9 | 115 | 468 | 5,990 |
| | FRED Central - River Club | 60 | 1 | 9 | 109 | 468 | 5,682 |
| F5 | Weekend Downtown Tourist Loop | 60 | 1 | 9 | 77 | 468 | 4,025 |
| CV1 | Celebrate Virginia Circulator | 30 | 1 | 9.0 | 135.5 | 468 | 7,048 |
| D2a | Southern Stafford - FRED Central - GEICO | 60 | 1 | 9 | 135 | 468 | 7,034 |
| D2b | Southern Stafford - FRED Central - English Village | 60 | 1 | 9 | 131 | 468 | 6,786 |
| D4 | Stafford Marketplace - Porter Library | 60 | 1 | 9 | 123 | 468 | 6,402 |
| S1 | Lees Hill Center - Spotsylvania Towne Centre | 60 | 1 | 9 | 285 | 468 | 14,845 |
| **FRED TOTALS** | | | **11** | **99** | **1,478** | **5,148** | **76,860** |
| M1 | Downtown/Central Park/Fall Hill/FRED | 60 | 1 | 9 | 109 | 297 | 3,612 |
| M2 | UMW/Central Park/Spotsylvania TC | 60 | 1 | 9 | 86 | 297 | 2,854 |
| **FRED Express TOTALS** | | | **2** | **18** | **196** | **594** | **6,466** |
| ***Sunday Total*** | | | ***13*** | ***117*** | ***1,674*** | ***5,742*** | ***83,325*** |

**Table F.13: FY2015 & FY2016 Recommended Weekday Service Statistics**

| Rte. # | Route Pattern | Frequency | Daily Buses | Average Weekday Rev. Hrs. | Average Weekday Rev. Miles | Annual Rev. Hours | Annual Rev. Miles |
|---|---|---|---|---|---|---|---|
| F1 | FRED Central to Spotsylvania Towne Centre | 30 | 2 | 28 | 289 | 7,140 | 73,685 |
| F2 | FRED Central to Cosner's Corner Via J.D.H | 60 | 1 | 15 | 243 | 3,825 | 61,927 |
| F3 | FRED Central to Lees Hill Center Via Lafayette | 30 | 2 | 30 | 432 | 7,650 | 110,160 |
| F4 | FRED Central -Central Park | 30 | 2 | 30 | 384 | 7,650 | 97,920 |
| | FRED Central - River Club | 30 | 2 | 30 | 364 | 7,650 | 92,871 |
| F5 | FRED Central - The Downtown Loop | 30 | 2 | 28 | 283 | 7,140 | 72,114 |
| *F6* | *NEW-Idlewilde-Westwood S.C. - Fred Central* | *60* | *1* | *14* | *105* | *3,570* | *26,882* |
| *CV1* | *Celebrate Virginia Circulator* | *30* | *1* | *12* | *181* | *3,060* | *46,084* |
| S1 | Cosner's Corner - Spotsylvania Towne Centre | 30 | 4 | 44 | 698 | 11,220 | 177,949 |
| S2 | Lees Hill Center - Marshall Center | 60 | 1 | 14 | 294 | 3,570 | 74,899 |
| | Lees Hill Center - Germanna College | 60 | 1 | 14 | 208 | 3,570 | 53,157 |
| S3a | Spots. Towne Centre to Courtland Commons | 60 | 2 | 24 | 335 | 6,120 | 85,496 |
| S3b | Courtland Commons to Cosner's Corner | 60 | 1 | 12 | 136 | 3,060 | 34,762 |
| D1 | Southern Stafford - Train Station - YMCA | 60 | 1 | 12 | 242 | 3,060 | 61,812 |
| D2a | Southern Stafford - FRED Central - GEICO | 60 | 1 | 14 | 210 | 3,570 | 53,657 |
| D2b | Southern Stafford - FRED Central - English Village | 60 | 1 | 14 | 203 | 3,570 | 51,765 |
| D3 | Stafford Courthouse - Aquia Towne Center | 30 | 2 | 28 | 309 | 7,140 | 78,754 |
| D4 | Stafford Marketplace - Porter Library | 60 | 1 | 12 | 164 | 3,060 | 41,861 |
| D5 | FRED Central to Stafford Courthouse | 30 | 2 | 28 | 610 | 7,140 | 155,652 |
| D6 | Stafford County Express - North/South VDOT | 12 | 0 | 4 | 40 | 1,020 | 10,200 |
| C1 | FRED-Bowling Green-Carmel Church-Ladysmith | 60 | 2 | 16 | 544 | 4,080 | 138,720 |
| C2 | FRED Central-CSC/DSS-Dawn Center/Port Royal | 60 | 2 | 16 | 307 | 4,080 | 78,254 |
| *C3* | *Ladysmith, Carmel Church, Cosner's Corner* | *120* | *1* | *8* | *176* | *2,040* | *44,880* |
| *C4* | *Caroline County - Bowling Green Circulator* | *60* | *1* | *8* | *80* | *2,040* | *20,400* |
| *C5* | *Caroline County - Ladysmith Circulator* | *60* | *1* | *8* | *96* | *2,040* | *24,480* |
| *K3* | *Dahlgren Circulator* | *60* | *1* | *8* | *120* | *2,040* | *30,600* |
| K1 | FRED Central - King George Shopping Center | 60 | 2 | 22 | 660 | 5,610 | 168,258 |
| K2 | FRED Central - The Shops at King George | 60 | 1 | 8 | 304 | 2,040 | 77,520 |
| VF1 | VRE Feeder-Idlewild-Train Station | varies | 1 | 9 | 64 | 2,295 | 16,218 |
| VF2 | VRE Feeder - Cowan Blvd.-Train Station | varies | 0 | 6 | 44 | 1,530 | 11,322 |
| VS1 | VRE Feeder - Gordon Rd-Ukrops-Train Station | varies | 2 | 13 | 88 | 3,188 | 22,542 |
| *VS2* | *VRE Feeder - Lee Park - Proposed VRE Station* | *varies* | *1* | *10* | *81* | *2,486* | *20,553* |
| **TOTALS** | | | **45** | **538** | **8,296** | **137,254** | **2,115,354** |

| Rte. # | Route Pattern | Frequency | Daily Buses | Average Weekday Rev. Hrs. | Average Weekday Rev. Miles | Annual Rev. Hours | Annual Rev. Miles |
|---|---|---|---|---|---|---|---|
| M2 | UMW/Central Park/Spotsylvania TC | 60 | 1 | 3 | 29 | 198 | 1,903 |
| **Thur/Fri** | | | **1** | **3** | **29** | **198** | **1,903** |
| M3 | UMW/Downtown/Central Park Late Night | 60 | 1 | 3 | 34 | 99 | 1,113 |
| **Fri** | | | **1** | **3** | **34** | **99** | **1,113** |

**Table F.14: FY2015 & FY2016 Recommended Saturday Service Statistics**

| Rte. # | Route Pattern | Frequency | Daily Buses | Average Saturday Rev. Hrs. | Average Saturday Rev. Miles | Annual Rev. Hours | Annual Rev. Miles |
|---|---|---|---|---|---|---|---|
| F1 | FRED Central to Spotsylvania Towne Centre | 60 | 1 | 13 | 134 | 676 | 6,963 |
| F2 | FRED Central to Cosner's Corner Via J.D.H | 60 | 1 | 13 | 208 | 676 | 10,816 |
| F3 | FRED Central to Lees Hill Center Via Lafayette | 60 | 1 | 13 | 187 | 676 | 9,734 |
| F4 | FRED Central -Central Park | 60 | 1 | 13 | 166 | 676 | 8,653 |
| | FRED Central - River Club | 60 | 1 | 13 | 158 | 676 | 8,207 |
| F5 | Weekend Downtown Tourist Loop | 60 | 1 | 13 | 112 | 676 | 5,814 |
| CV1 | Celebrate Virginia Circulator | 30 | 1 | 13 | 196 | 676 | 10,181 |
| D2a | Southern Stafford - FRED Central - GEICO | 60 | 1 | 13 | 195 | 676 | 10,160 |
| D2b | Southern Stafford - FRED Central - English Village | 60 | 1 | 13 | 189 | 676 | 9,802 |
| D3 | Stafford Courthouse - Aquia Towne Center | 60 | 1 | 13 | 143 | 676 | 7,456 |
| D4 | Stafford Marketplace - Porter Library | 60 | 1 | 13 | 178 | 676 | 9,248 |
| D5 | FRED Central to Stafford Courthouse | 60 | 1 | 13 | 283 | 676 | 14,737 |
| S1 | Lees Hill Center - Spotsylvania Towne Centre | 60 | 1 | 13 | 412 | 676 | 21,443 |
| S2a | Lees Hill Center - Germanna College | 60 | 1 | 13 | 195 | 676 | 10,140 |
| **FRED TOTALS** | | | **14** | **169** | **2,562** | **9,464** | **143,353** |
| M1 | Downtown/Central Park/Fall Hill/FRED | 60 | 1 | 13 | 158 | 429 | 5,217 |
| M2 | UMW/Central Park/Spotsylvania TC | 60 | 1 | 13 | 125 | 429 | 4,123 |
| M3 | UMW/Downtown/Central Park Late Night | 60 | 1 | 3 | 34 | 99 | 1,113 |
| **FRED Express TOTALS** | | | **3** | **29** | **317** | **957** | **10,452** |
| ***Saturday Total*** | | | ***17*** | ***198*** | ***2,879*** | ***10,421*** | ***153,805*** |

**Table F.15: FY2015 & FY2016 Recommended Sunday Service Statistics**

| Rte. # | Route Pattern | Frequency | Daily Buses | Average Sunday Rev. Hrs. | Average Sunday Rev. Miles | Annual Rev. Hours | Annual Rev. Miles |
|---|---|---|---|---|---|---|---|
| F1 | FRED Central to Spotsylvania Towne Centre | 60 | 1 | 9 | 93 | 468 | 4,820 |
| F2 | FRED Central to Cosner's Corner Via J.D.H | 60 | 1 | 9 | 144 | 468 | 7,488 |
| F3 | FRED Central to Lees Hill Center Via Lafayette | 60 | 1 | 9 | 130 | 468 | 6,739 |
| F4 | FRED Central -Central Park | 60 | 1 | 9 | 115 | 468 | 5,990 |
| | FRED Central - River Club | 60 | 1 | 9 | 109 | 468 | 5,682 |
| F5 | Weekend Downtown Tourist Loop | 60 | 1 | 9 | 77 | 468 | 4,025 |
| CV1 | Celebrate Virginia Circulator | 30 | 1 | 9.0 | 135.5 | 468 | 7,048 |
| D2a | Southern Stafford - FRED Central - GEICO | 60 | 1 | 9 | 135 | 468 | 7,034 |
| D2b | Southern Stafford - FRED Central - English Village | 60 | 1 | 9 | 131 | 468 | 6,786 |
| D3 | Stafford Courthouse - Aquia Towne Center | 60 | 1 | 9 | 99 | 468 | 5,162 |
| D4 | Stafford Marketplace - Porter Library | 60 | 1 | 9 | 123 | 468 | 6,402 |
| D5 | FRED Central to Stafford Courthouse | 60 | 1 | 9 | 196 | 468 | 10,202 |
| S1 | Lees Hill Center - Spotsylvania Towne Centre | 60 | 1 | 9 | 285 | 468 | 14,845 |
| S2a | Lees Hill Center - Germanna College | 60 | 1 | 9 | 135 | 468 | 7,020 |
| **FRED TOTALS** | | | **14** | **117** | **1,774** | **6,552** | **99,244** |
| M1 | Downtown/Central Park/Fall Hill/FRED | 60 | 1 | 9 | 109 | 297 | 3,612 |
| M2 | UMW/Central Park/Spotsylvania TC | 60 | 1 | 9 | 86 | 297 | 2,854 |
| **FRED Express TOTALS** | | | **2** | **18** | **196** | **594** | **6,466** |
| ***Sunday Total*** | | | ***16*** | ***135*** | ***1,969*** | ***7,146*** | ***105,710*** |

Note: Routes D6 and VF2 are interlined with other routes. This TDP assumes interlining will continue on these two routes. If conditions make existing vehicles unavailable for these two routes, two additional vehicles may be needed.

U.S. Department
of Transportation
**Federal Transit
Administration**

REGION III
Delaware, District of
Columbia, Maryland,
Pennsylvania, Virginia,
West Virginia

1760 Market Street
Suite 500
Philadelphia, PA 19103-4124
215-656-7100
215-656-7260 (fax)

AUG 28 2008

Ms. Kathleen M. Beck
Transit Manager
Fredericksburg Regional Transit
1400 Jefferson Davis Highway
Fredericksburg, VA 22401

Re: Triennial Review Finding

Dear Ms. Beck:

This is in response to your e-mail dated August 26, 2008 addressing the remaining finding as a result of the Fredericksburg Regional Transit's triennial review.

Based on the information submitted, the Federal Transit Administration has concluded that the corrective action for D-03 and D-04, Satisfactory Continuing Control closes these findings. Therefore, the subject review is now considered closed.

We appreciate the completion of the recommended corrective actions. If you need further assistance please contact Karen Roscher. She can be reached at 215-656-7002.

Sincerely,

Michael McCollum

for Michael McCollum
Director, Office of Program
Management & Oversight

U.S. Department
of Transportation
**Federal Transit
Administration**

REGION III
Delaware, District of
Columbia, Maryland,
Pennsylvania, Virginia,
West Virginia

1760 Market Street
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Philadelphia, PA 19103-4124
215-656-7100
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JUL 30 2008

Ms. Kathleen M. Beck
Transit Manager
Fredericksburg Regional Transit
1400 Jefferson Davis Highway
Fredericksburg, VA 22401

Re: FY 2008 Triennial Review – Final Report

Dear Ms. Beck:

Enclosed is a copy of the Final Report of the Triennial Review that was conducted at the Fredericksburg Regional Transit (FRED) in Fredericksburg, Virginia. Ms. Kay Luongo of Interactive Elements, Incorporated, conducted the review and prepared the report for the Federal Transit Administration (FTA).

The report focused on FRED's compliance in the 22 areas that were reviewed. A Drug and Alcohol Audit was conducted in FY 2006 so this area was not reviewed. Corrective actions were required in three areas; Financial, Satisfactory Continuing Control and Buy America. In addition, advisory comments were made in the areas of Maintenance and Safety and Security.

Following the site visit, FRED corrected the deficiencies in the Financial and Buy America areas. Those findings are now closed. The deficiencies and corrective actions that must be taken in Satisfactory Continuing Control are detailed in the report.

Thank you for the hospitality and cooperation shown to us in conjunction with the Triennial Review. If you have any questions please call Karen Roscher at (215) 656-7002.

Sincerely,

Michael McCollum

Letitia A. Thompson
Regional Administrator

Enclosure

cc: M[illegible] Tucker, VDR&PT

*FINAL REPORT*

# FY2008 TRIENNIAL REVIEW

**of the**

## City of Fredericksburg
## Fredericksburg, Virginia
## Fredericksburg Regional Transit (FRED)

**Desk Review: January 8, 2008**
**Site Visit: July 8-9, 2008**

**July 2008**

**Prepared for the**
**Federal Transit Administration**
**Region III**
**Philadelphia, PA**

**by**

**Interactive Elements Incorporated**
**60 East 42nd Street - Suite 2035**
**New York, NY 10165**

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## I. TRIENNIAL REVIEW BACKGROUND

The United States Code, chapter 53 of title 49, requires the Federal Transit Administration (FTA) of the United States Department of Transportation (USDOT) to perform reviews and evaluations of Urbanized Area Formula Grant activities at least every three years. This requirement is contained in 49 U.S.C. 5307(i).

> (2) At least once every 3 years, the Secretary shall review and evaluate completely the performance of a recipient in carrying out the recipient's program, specifically referring to compliance with statutory and administrative requirements and the extent to which actual program activities are consistent with the activities proposed under subsection (d) of this section and the planning process required under sections 5303-5306 of this title.
>
> (3) The Secretary may take appropriate action consistent with the review, audit and evaluation under this subsection, including making an appropriate adjustment in the amount of a grant or withdrawing the grant.

The Triennial Review includes a review of the grantee's compliance in 23 different areas. The basic requirements for each of these areas are summarized below.

This report presents the findings from the Triennial Review of the City of Fredericksburg Virginia (the City), which operates Fredericksburg Regional Transit, or FRED. This review was performed in accordance with FTA procedures (published in FTA Order 9010.1B, April 5, 1993) and included preliminary reviews of documents on file at the Region III Office in Philadelphia and on-site discussions and review of the procedures, practices, and records of the City as deemed necessary. The review concentrated primarily on procedures and practices employed during the past three years; however, coverage was extended to earlier periods as needed to assess the policies in place and the management of grants. During the visit, administrative and statutory requirements were discussed, documents were reviewed, and facilities were toured. Specific documents examined during the Triennial Review are available in FTA's and the City's files.

## II. REVIEW PROCESS

The desk review was conducted in the Region III Office on January 8, 2008. Following the desk review, an agenda package was sent to the City advising it of the site visit and indicating additional information that would be needed and issues that would be discussed.

The site visit to the City was conducted on July 8-10, 2008. The individuals participating in the review are listed in Section VII of this report.

At the entrance conference, the purpose of the Triennial Review and the review process were discussed. During the site visit, urbanized area formula grant program administrative and statutory requirements were discussed and documents were reviewed. The City's transit facilities were toured to provide an overview of activities related to FTA-funded projects. A sample of FTA-funded vehicles was inspected during the site visit.

On completion of the review, an exit conference was held with City staff to discuss findings, corrective actions and schedules. This information is summarized in the table in Section V of this report. A draft copy of this report was provided to the City at the exit conference.

## III. DESCRIPTION OF THE GRANTEE

The City of Fredericksburg began operating Fredericksburg Regional Transit (FRED) in 1996 with four routes and five vehicles. This has since grown to a regional network of 22 routes and 31 vehicles serving not only the City of Fredericksburg but also the counties of Caroline, King George, Spotsylvania and Stafford. The population of the service area is approximately 144,000.

FRED operates the core routes Monday through Friday from 6:30 a.m. until 8:30 p.m. and offers special limited late night service Thursday and Friday and all day Saturday and Sunday during the University of Mary Washington Academic school year, from August to April. This service is open to the public and is provided with financial support from the University of Mary Washington so that its students may ride free.

Similar to the arrangements with the University of Mary Washington, employers in the service area who make cash or in-kind contributions valued at greater than $25,000 per year earn for their employees the benefit of riding FRED for free. In 2007, FRED added two new business/community "Partners" with in-kind or cash contributions totaling approximately $75,000 per year.

In addition to its core daytime services, FRED now offers two new commuter rail feeder routes, one in Fredericksburg and one in Spotsylvania County. FRED also has recently added a new regular route in Spotsylvania County; a new shuttle between the University of Mary Washington's Fredericksburg and Stafford County campuses; and more frequent services on existing routes in Fredericksburg and Spotsylvania County. FRED also provides a.m. and p.m. services to commuter lots in Stafford County.

The adult fare for regular route service is $.25; transfers are $.25; and the FRED monthly pass is $15. The FRED fare for the VRE commuter feeder routes is $1 and the monthly pass is $30. Children under the age of three ride free. Employees of large scale business/community "Partners" must present proper identification to ride free.

All FRED service, except for the commuter rail feeder service, is fixed-route deviation; the City does not provide complementary paratransit service. All vehicles are equipped with

wheelchair lifts and all drivers are trained in proper wheelchair securement procedures. Route deviation requires 24-hour advance notification and cannot exceed the ¾ mile or two minute off-route limit.

Since 1997, FRED has been the local agent for Greyhound, and Greyhound intercity buses stop at FRED's headquarters, FRED Central.

FRED's National Transit Database Report for FY2007 provided the following financial and operating statistics for its fixed-route deviation service:

| | **Fixed/Route Deviation Service** |
|---|---|
| Unlinked Passengers | 367,999 |
| Revenue Hours | 51,186 |
| Operating Expenses | $2,396,950 |

In addition to increasing routes and service, highlights of FRED's accomplishments over the last three years include:

In October of 2007, the City completed the Lawrence A. Davies Transit Center, commonly referred to as FRED Central, on time and within the $5 million budget.

FRED ridership has increased from 306,304 unlinked trips in calendar year (CY) 2005 to 367,999 unlinked trips in CY 2007, an increase of almost 17 percent.

In 2006, FRED completed its first Transit Development Plan, which is being used to guide service development and capital investment; expanded administrative and planning staff to include an Assistant Director of Public Transit, a Manager for Policy, Planning and Compliance, a Route and Service Planner, and an Account Clerk; and expanded the number of full-time and part-time drivers. FRED worked to improve training programs to ensure all drivers are fully trained from the outset. FRED instituted refresher training to emphasize critical areas such as defensive driving and mobility aid equipment handling.

In addition in 2007, FRED completed a preliminary feasibility analysis of building a maintenance facility for FRED. Based on the high estimated cost of a "green field" facility, FRED staff made a decision to lease existing space to begin to bring more maintenance and repair activities in-house. Grant funding as been secured to acquire and improve currently leased space for maintenance activities.

Also in 2007, FRED conducted the first comprehensive review of FRED's fare level and structure, reaching a decision to eliminate free transfers. All FRED riders must now pay $0.25 each time they board. As a result, FRED's farebox revenues have increased significantly.

In 2007, FRED designed and implemented a new website, www.rideFRED.com.

Over the next three to five years, FRED plans to purchase and remodel a maintenance facility; add maintenance and repair staff; refine and expand service; hire additional drivers; purchase buses for replacement and service expansion; purchase bus shelters, automate route planning; install GPS tracking units on its fleet; and automate driver scheduling. In addition, FRED plans to develop, coordinate and implement plans to serve major new tourist attractions, shopping centers, medical centers and housing developments.

## IV. RESULTS OF THE REVIEW

The Triennial Review focused on the City's compliance in 22 of the 23 different areas. A Drug and Alcohol Audit was conducted in FY 2006 so this area was not reviewed. This section provides a discussion of the basic requirements and findings in each area. No deficiencies were found with the FTA requirements in 19 areas. Deficiencies were found in three areas; Financial, Satisfactory Continuing Control and Buy America. In addition, advisory comments were made in the areas of Maintenance and Safety and Security. Following the site visit, FRED corrected the deficiencies in the Financial and Buy America areas. Those findings are now closed.

### 1. Legal

Basic Requirement: The grantee must be eligible and authorized under state and local law to request, receive, and dispense FTA funds and to execute and administer FTA funded projects. The authority to take all necessary action and responsibility on behalf of the grantee must be properly delegated and executed.

Findings: During this Triennial Review of the City, no deficiencies were found with the FTA requirements for legal.

### 2. Financial

Basic Requirement: The grantee must demonstrate the ability to match and manage FTA grant funds, to cover cost overruns, to cover operating deficits through long-term stable and reliable sources of revenue, to maintain and operate federally funded facilities and equipment, and to conduct an annual independent organization-wide audit in accordance with the provisions of OMB C A-133.

Findings: During this Triennial Review of the City, deficiencies were found with the FTA requirements for financial.

During the review, discussions regarding the process for reporting unliquidated obligations indicated that the City is not completing the unliquidated obligations line (Line D) of the Financial Status Report. Unliquidated obligations are funding commitments that have been incurred, but for which outlays have not yet been recorded because goods and services have not been received.

Corrective Action and Schedule: On July 15, 2008, following the site visit, FRED provided the FTA Region III Office a copy of the processes and procedures that FRED will use to track and report unliquidated obligations correctly in TEAM. This finding is closed.

### 3. Technical

Basic Requirement: The grantee must be able to implement the Urbanized Area Formula Grant Program of Projects in accordance with the grant application, Master Agreement, and all applicable laws and regulations, using sound management practices.

Findings: During this Triennial Review of the City, no deficiencies were found with the FTA requirements for technical.

### 4. Satisfactory Continuing Control

Basic Requirement: The grantee must maintain control over real property, facilities and equipment and ensure that they are used in transit service.

Findings: During this Triennial Review of the City, deficiencies were found with the FTA requirements for satisfactory continuing control.

The City did not demonstrate that equipment records are complete. The records that were provided for the vehicles did not have the grant number, location, use and condition and federal percentage

The City has not conducted a physical inventory of FTA funded equipment in the past two years. The Common Grant Rule and FTA Circular 5010.1C require grantees to conduct a physical inventory of equipment and to reconcile to results with the equipment records at least once every two years. FTA defines equipment as all tangible, nonexpendable, personal property that has a service life of more than one year and an acquisition and installation cost of $5,000 or more per unit.

Corrective Action and Schedule: Within 60 days of the final report or by October 9, 2008, the City must provide FTA with updated equipment records that include all the required information.

Within 60 days of the final report or by October 9, 2008, the City must provide FTA with evidence that it has conducted a physical inventory of equipment and reconciled the results of the inventory with the equipment records.

## 5. Maintenance

Basic Requirement: The grantee must keep federally funded equipment and facilities in good operating order.

Findings: During this Triennial Review of the City, no deficiencies were found with the FTA requirements for maintenance.

Advisory Comment: A review of a sample of preventive maintenance (PM) inspections records for the FRED fleet indicates that PM inspections are being performed on time. FRED recently filled the positions of Fleet Manager and Operations Manager in a proactive move in support of its goals and objectives to reduce the cost of the maintenance and contracting costs for fleet maintenance. In addition to these positive steps, the City should consider updating "The Vehicle Maintenance Program" to include a checklist that identifies the current mix of vehicles in the fleet and incorporates actions specific to each vehicle type and model in accordance with the manufacturer's recommendations.

## 6. Procurement

Basic Requirement: FTA grantees will use their own procurement procedures that reflect applicable state and local laws and regulations, provided that the process ensures competitive procurement and that the procedures conform to applicable federal law including 49 CFR Part 18, specifically Section 18.36 and FTA C 4220.1E, "Third Party Contracting Requirements." Grantees will maintain a contract administration system that ensures that contractors perform in accordance with terms, conditions, and specifications of their contracts or purchase orders.

Findings: During this Triennial Review of the City, no deficiencies were found with the FTA requirements for procurement.

## 7. Disadvantaged Business Enterprise (DBE)

Basic Requirement: The grantee must comply with the policy of USDOT that DBEs, as defined in 49 CFR Part 26, are ensured nondiscrimination in the award and administration of USDOT-assisted contracts. Grantees also must create a level playing field on which DBEs can compete fairly for USDOT-assisted contracts; ensure that only firms that fully meet eligibility standards are permitted to participate as DBEs; help remove barriers to the participation of DBEs; and assist the development of firms that can compete successfully in the marketplace outside the DBE program.

Findings: During this Triennial Review of the City, no deficiencies were found with USDOT requirements for DBE.

## 8. Buy America

Basic Requirement: Per Buy America law, federal funds may not be obligated unless steel, iron, and manufactured products used in FTA-funded projects are produced in the United States, unless FTA has granted a waiver, or the product is subject to a general waiver. Rolling stock must have a 60 percent domestic content and final assembly must take place in the United States.

Findings: During this Triennial Review of the City, deficiencies were found with the FTA requirements for Buy America.

The City recently completed a bus procurement. During discussions with staff and a review of the procurement activity, it was noted that the City did not conduct the required pre-award and post-delivery audits of the purchases of rolling stock and did not have the properly completed pre-award and post-delivery certifications in its contract files.

Corrective Action and Schedule: On July 15, 2008, following the site visit, FRED provided a copy of its revised procurement procedures. The revised procurement procedures adequately address federal requirements and will provide assurance that the requirements are included in all federalized procurement activities. This finding is now closed.

## 9. Suspension/Debarment

Basic Requirement: To protect the public interest and prevent fraud, waste, and abuse in federal transactions, persons or entities, which by defined events or behavior, potentially threaten the integrity of federally administered programs, are excluded from participating in FTA assisted programs. Federal agencies use the government-wide nonprocurement debarment and suspension system to exclude from Federal programs persons who are not presently responsible. Grantees are required to ensure to the best of their knowledge and belief that none of the grantee's "principals" (as defined in the governing regulation 49 CFR Part 29), subrecipients, and third-party contractors and subcontractors is debarred, suspended, ineligible, or voluntarily excluded from participation in federally assisted transactions or procurements. Grantees are required to review the Excluded Parties Listing System (http://epls.arnet.gov/) before entering into any third party contracts.

Findings: During this Triennial Review of the City, no deficiencies were found with the FTA requirements for suspension/debarment.

## 10. Lobbying

Basic Requirement: Recipients of federal grants and contracts exceeding $100,000 must certify compliance with Restrictions on Lobbying before they can receive funds. In addition, grantees are required to impose the lobbying restriction provisions on their contractors.

Findings: During this Triennial Review of the City, no deficiencies were found with the FTA requirements for lobbying.

### 11. Planning/Program of Projects

Basic Requirement: The grantee must participate in the transportation planning process in accordance with FTA requirements, SAFETEA-LU, and the Metropolitan and Statewide Planning Regulations.

Each recipient of a grant shall have complied with the public participation requirements of Section 5307(c)(1) through (7). Each recipient is required to develop, publish, afford an opportunity for a public hearing on, and submit for approval a Program of Projects (POP).

Findings: During this Triennial Review of the City, no deficiencies were found with the FTA requirements for planning/POP.

### 12. Title VI

Basic Requirement: The grantee must ensure that no person in the United States shall, on the ground of race, color, or national origin, be excluded from participating in, or denied the benefits of, or be subject to discrimination under any program or activity receiving federal financial assistance. The grantee must ensure that federally supported transit service and related benefits are distributed in an equitable manner.

Findings: During this Triennial Review of the City, no deficiencies were found with the FTA requirements for Title VI.

### 13. Public Comment Process for Fare and Service Changes

Basic Requirement: The grantee must have a locally developed process to solicit and consider public comment before raising a fare or carrying out a major reduction of transportation services.

Findings: During this Triennial Review of the City, no deficiencies were found with the FTA requirements for public comment process for fare and service changes.

## 14. Half Fare

Basic Requirement: Grantees must ensure that elderly persons and persons with disabilities, or an individual presenting a Medicare card, will be charged during non-peak hours for transportation using or involving a facility or equipment of a project financed under Section 5307 not more than 50 percent of the peak hour fare.

Findings: During this Triennial Review of the City, no deficiencies were found with the FTA requirements for half fare.

## 15. ADA

Basic Requirement: Titles II and III of the Americans with Disabilities Act of 1990 provide that no entity shall discriminate against an individual with a disability in connection with the provision of transportation service. The law sets forth specific requirements for vehicle and facility accessibility and the provision of complementary paratransit service.

Findings: During this Triennial Review of the City, no deficiencies were found with the FTA requirements for ADA.

## 16. Charter Bus

Basic Requirement: Grantees are prohibited from using federally funded equipment and facilities to provide charter service except on an incidental basis and when one or more of applicable exceptions for urban areas set forth in the charter service regulation at 49 CFR 604.9 (b) applies.

Findings: During this Triennial Review of the City, no deficiencies were found with the FTA requirements for charter bus.

## 17. School Bus

Basic Requirement: Grantees are prohibited from providing exclusive school bus service unless the grantee qualifies under specified exceptions. In no case can federally funded equipment or facilities be used.

Findings: During this Triennial Review of the City, no deficiencies were found with the FTA requirements for school bus.

## 18. National Transit Database (NTD)

Basic Requirement: The grantee must collect, record, and report financial and non-financial data in accordance with the Uniform System of Accounts (USOA) and updated with the *National Transit Database (NTD) Reporting Manual* as required by 49 USC 5335(a).

Findings: During this Triennial Review of the City, no deficiencies were found with the FTA requirements for National Transit Database.

## 19. Safety and Security

Basic Requirement: Any recipient of Urbanized Area Formula Grant Program funds must annually certify that it is spending at least one percent of such funds for transit security projects or that such expenditures for security systems are not necessary.

Under the safety authority provisions of the Federal transit laws, the Secretary has the authority to investigate the operations of the grantee for any conditions that appear to create a serious hazard of death or injury, especially to patrons of the transit service. However, FTA has no specific requirements for transit safety. States are required to oversee the safety of rail fixed guideway systems through a designated oversight agency.

Under security, a list of 17 Security and Emergency Management Action Items has been developed by FTA and the Department of Homeland Security's Transportation Security Administration (TSA). This list of 17 items, an update to the original FTA Top 20 security action items list, was developed in consultation with the public transportation industry through the Mass Transit Sector Coordinating Council, for which the American Public Transportation Association (APTA) serves as Executive Chair. Security and Emergency Management Action Items for Transit Agencies aim to elevate security readiness throughout the public transportation industry by establishing baseline measures that transit agencies should employ.

Findings: A summary of the City's expenditures of Section 5307 funds for security projects is provided in Section VI of this report.

During this Triennial Review of the City, no deficiencies were found with the FTA requirements for safety and security.

Advisory Comment: During the review of the Fredericksburg Transit Facility located at 1400 Jefferson Davis Highway, a large number of people were noted in the general area where fare boxes are retrieved from buses and emptied. Although the area is monitored by cameras, the facility appears vulnerable and could benefit from additional security provided by either the dedication of a full time local police officer or contracted security guards.

## 20. Drug-Free Workplace

Basic Requirement: Grantees are required to maintain a drug-free workplace for all employees and to have an ongoing drug-free awareness program.

Findings: During this Triennial Review of the City, no deficiencies were found with the FTA requirements for drug-free workplace.

## 21. Drug and Alcohol Program

Basic Requirement: Grantees receiving FTA funds under Capital Grant, Urbanized Area Formula Grant, or Non-Urbanized Area Formula Grant Programs must have a drug and alcohol testing program in place for all safety-sensitive employees.

Findings: During this Triennial Review of the City, no deficiencies were found with the FTA requirements for the drug and alcohol program.

## 22. Equal Employment Opportunity (EEO)

Basic Requirement: The grantee must ensure that no person in the United States shall, on the ground of race, color, creed, national origin, sex, age, or disability be excluded from participating in, denied the benefits of, or be subject to discrimination in employment under any project, program or activity receiving federal financial assistance from the federal transit laws.

Findings: During this Triennial Review of the City, no deficiencies were found with the FTA requirements for EEO.

## 23. ITS Architecture

Basic Requirement: Intelligent Transportation Systems (ITS) projects funded by the Highway Trust Fund and the Mass Transit Account must conform to the National ITS Architecture, as well as to U. S. Department of Transportation (USDOT) adopted ITS standards.

Findings: During this Triennial Review of the City, no deficiencies were found with the FTA requirements for ITS architecture.

SUMMARY OF FINDINGS AND CORRECTIVE ACTIONS

| Review Area | Finding | Deficiency | Corrective Action | Response Days/Date | Date Closed |
|---|---|---|---|---|---|
| 1. Legal | ND | | | | |
| 2. Financial | D | 06 Incorrect reporting of unliquidated obligations | Develop procedures to track and report unliquidated obligations correctly. | 30 days 9/9/08 | July 15, 2008 |
| 3. Technical | ND | | | | |
| 4. Satisfactory Continuing Control | D | 03 Incomplete equipment records 04 No evidence of physical inventory | The City must provide FTA with updated equipment records.<br><br>Must provide evidence that a physical inventory has been conducted and reconciled. | 60 days 10/9/08 60 days 10/9/08 | |
| 5. Maintenance | AC | | Update Vehicle Maintenance Program to identify current mix of vehicles | | |
| 6. Procurement | ND | | | | |
| 7. Disadvantaged Business Enterprise | ND | | | | |
| 8. Buy America | D | 07 Pre award and post delivery audits not performed | Revise procurement procedures to ensure applicable federal requirements are met. | 90 days 11/9/08 | July 15, 2008 |
| 9. Suspension/ Debarment | ND | | | | |
| 10. Lobbying | ND | | | | |
| 11. Planning/POP | | | | | |
| 12. Title VI | ND | | | | |
| 13. Public Comment for Fare and Service Changes | | | | | |
| 14. Half Fare | ND | | | | |
| 15. ADA | ND | | | | |
| 16. Charter Bus | ND | | | | |
| 17. School Bus | ND | | | | |
| 18. National Transit Database | ND | | | | |
| 19. Safety and Security | AC | | The new facility on Jefferson Davis Highway could benefit from additional security | | |
| 20. Drug-Free Workplace | ND | | | | |
| 21. Drug and Alcohol Program | NR | | | | |
| 22. Equal Employment Opportunity | ND | | | | |
| 23. ITS Architecture | ND | | | | |

Findings: ND = No Deficiencies; D = Deficient; AC = Advisory Comment; NA = Not Applicable; NR = Not Reviewed

## V. TRANSIT SECURITY EXPENDITURES

Does the grantee expend one percent or more of its Section 5307 Urbanized Area Formula Grant funds for transit security? Yes_X___ No___

If no, why does the grantee consider such expenditure unnecessary (check all that apply):
_____ No deficiency found from a threat and vulnerability assessment
_____ TSA/FTA Security and Emergency Management Action Items met or exceeded
_____ Other (please describe): The new facility on Jefferson Davis Highway was constructed with several built in security devices such as cameras. Th grantee will probably use the 1 percent in the future for additional security for the facility. .

| Security Funding | FTA Section 5307 Funds (in Dollars) | | |
|---|---|---|---|
| | FY 2005 | FY 2006 | FY 2007 |
| Total amount of 5307 Funds expended | $372,796 | $796,515 | $822,732 |
| Amount of 5307 Funds expended on security | | $100,00t | $100,00t |
| Percent of 5307 Funds expended on security | % | .01% | .01% |
| **Infrastructure/Capital Improvement Security Projects:** | | | |
| Lighting, Fencing & Perimeter Control | | | |
| CCTV and Surveillance Technology | | | |
| Communications Systems | | | |
| Security Planning* | | | |
| Drills & Tabletop Exercises* | | | |
| Employee Security Training* | | | |
| Other Security-Related Infrastructure & Capital Improvements (please list): _____ | | | |
| **Operating/Personnel Expenditures (can only be used by agencies in areas with populations UNDER 200,000):** | | | |
| Contracted Security Force | | | |
| In-house Security Force | | | |
| Other Security-Related Operating Expenditures (please list): _____ | | | |

* SAFETEA-LU amended the definition of a capital project to include:
- projects to refine and develop security and emergency response plans;
- the conduct of emergency response drills with public transportation agencies and local first response agencies; and
- security training for public transportation employees.

## VI. ATTENDEES

| Name | Title/Organization | Phone Number | e-mail address |
|---|---|---|---|
| ***Grantee*** | | | |
| Kathy Beck | Director, Public Transit FRED Transit | 540-372-1222 X 204 | kbeck@fredericksburgva.gov |
| Wendy Kimball | Assistant Director | 540-372-1222 X 207 | wlkimball@fredericksburgva.gov |
| Marilyn Graves | Administrative Assistant | 540-372-1222 X 205 | mgraves@fredericksburgva.gov |
| Arnold Levine | Manager, Policy, Planning & Compliance | 540-372-1222 X209 | alevine@fredericksburgva.gov |
| Danny Stribling | Fleet Manager | 540-372-1222 | dstribling@fredericksburgva.gov |
| Glenn Jenkins | Operations Manager | 540-372-1222 X 206 | gjenkins@fredericksburgva.gov |
| Phillip Rodenberg | City Manager | 540 372 1201 | prodenberg@fredericksburgva.gov |
| ***FTA*** | | | |
| Karen Roscher | Transportation Specialist | 215 656 7002 | Karen.Roscher@dot.gov |
| | | | |
| ***Reviewer*** | | | |
| Kay Luongo | IEI Reviewer | 239 961 9680 | kxl@ieitransit.com |
| | | | |
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| | | | |

# FREDERICKSBURG REGIONAL TRANSIT

# TRANSIT DEVELOPMENT PLAN

# FISCAL YEAR 2011-2016

## Executive Summary

**October 2010**

Prepared by:

CONNETICS TRANSPORTATION GROUP

Under Sub-Contract to:

PBSJ

Under Contract to:

DRPT
Virginia Department of Rail and Public Transportation

# EXECUTIVE SUMMARY

The Transit Development Plan (TDP) is a Short-Range Plan that presents agency goals and objectives; provides an assessment of existing service characteristics; identifies near-term service and facility needs; and presents a schedule for funding and implementing new services and facilities. The Commonwealth of Virginia Department of Rail and Public Transportation (DRPT) requires TDPs as a condition for state funding. The TDPs are used by DRPT for state-level programming and planning and provide a basis for DRPT to include agency programs in Statewide Transportation Improvement Program. The TDPs have a minimum 6-year timeframe and are updated every six years, with annual status updates required in subsequent years. DRPT has identified specific TDP content requirements and is providing technical assistance to agencies like FRED to complete the TDP.

The FY2011 - FY2016 TDP presents a comprehensive evaluation of FREDericksburg Regional Transit (FRED) service and cost characteristics. Key elements that addressed in the TDP include:

- Development of goals, objectives and performance standards that are to guide further development of FRED services;
- A detailed evaluation of existing service characteristics, with identification of system strengths and weaknesses;
- A peer agency review that compares FRED service and financial characteristics to other similar-sized systems;
- A summary of rider survey results from a transit on-board survey conducted in March 2010;
- A listing of potential service and facility improvements, for consideration in the TDP;
- Recommended service improvements and vehicle purchases for inclusion in the TDP, with improvements identified by year; and
- Funding requirements and potential funding sources for recommended service improvements and vehicle purchases.

The TDP is composed of eight chapters. **Chapter 1: Overview of Transit System** provides a description of FRED's history, governance and organizational structure, transit services provided and areas served, fare structure, vehicle fleet, existing facilities, transit security program and public outreach. **Chapter 2: Goals, Objectives and Standards** identifies specific goals and objectives for the TDP timeframe as well as performance measures for FRED to use as a benchmark to evaluate existing and future service. **Chapter 3: Service and System Evaluation** provides detailed analysis of existing service provided by FRED as well as local conditions that may affect transit ridership, and includes an evaluation of existing service data, fare utilization, historical performance over the past five years, peer review, on-board survey results, public outreach efforts, facility and equipment characteristics, intelligent transportation services (ITS), Title IV and Triennial review results, service coverage characteristics such as population, employment and household densities, land use, and bicycle and pedestrian plans. **Chapter 4: Transit Service and Facility Needs** identifies unconstrained service, facility and equipment needs and funding requirements. **Chapter 5: Service Recommendations** provides service, vehicle and facility improvements recommended for implementation during the 2011 to 2016 TDP timeframe. **Chapter 6: Capital**

**Improvement Program** provides the revenue vehicle replacement program, non-revenue vehicle replacement program, vehicle expansion program and facility improvement program. **Chapter 7: Financial Plan** identifies operating and maintenance costs and funding sources, bus purchase costs and funding sources, support vehicle purchase costs and funding sources, and other capital costs and funding sources. **Chapter 8: TDP Monitoring and Evaluation** provides recommendations for coordination with other plans and programs, service performance and monitoring and annual TDP monitoring requirements.

This Executive Summary summarizes the analysis and recommendations identified in the FY 2011-FY 2016 TDP.

## Overview of Transit System

FREDericksburg Regional Transit (FRED) provides fixed route transit service with deviations to the Fredericksburg Region including the City of Fredericksburg and Spotsylvania, Stafford, Caroline and King George Counties. According to 2008 NTD data, FRED's service area is 242 square miles with a population of 113,716.

FREDericksburg Regional Transit (FRED) formed in 1996 to provide service to the City of Fredericksburg. FRED service grew from four routes and five vehicles in its opening year to 23 routes and 31 vehicles in 2010. While FRED originated as City of Fredericksburg service, the system is now regional in scope and also serves Caroline, King George, Spotsylvania and Stafford Counties. In 1998, FRED expanded service into Spotsylvania County. FREDExpress service to the University of Mary Washington followed in 1999. Service in southern Stafford County started in 2001, and Caroline County service began in 2002 with a service expansion in 2003. Service in northern Stafford and King George Counties began operation in 2005. In 2007, FRED began providing feeder service to the Virginia Railway Express station in downtown Fredericksburg. The Lawrence A. Davies Transit Center (FRED Central) on Jefferson Davis Highway houses FRED offices and also serves as a transit center. The new facility opened in 2007.

FRED provides fixed route transit service with deviations on Monday through Friday from 6:30 a.m. until 8:30 p.m. The service area includes five routes in the City of Fredericksburg, six Stafford County routes, three routes in Spotsylvania County, two King George County routes and two routes in Caroline County. Because the fixed route service is deviation service, all of FRED's fixed routes can deviate within a ¾ mile radius or up to two minutes of the fixed route alignment with 24 hours' notice. FREDExpress is limited service to the University of Mary Washington with three routes on Thursday and Friday nights as well as on Saturday and Sunday during the academic school year and is available to the public at large. FRED also provides feeder service to the VRE train station on weekdays during peak travel times via three routes. Partner jurisdictions provide funding for the local match based on the number of revenue hours of service they receive from FRED. FRED is also the local agent for Greyhound intercity bus service from Fredericksburg. Tables 3 through 5 list all FRED fixed routes, FREDExpress and VRE Feeder routes, areas served, hours of operation and key destinations. The maps in Figures 1 through 3 show all of the routes in FRED's service area.

FREDericksburg Regional Transit (FRED) is owned and operated by the City of Fredericksburg and governed by the City Council. In addition to the City of Fredericksburg, FRED has several funding partners. Partner jurisdictions, which include Spotsylvania, Stafford, Caroline and King George Counties, provide a local match based on the percentage of service received. Agreements with public partners are renewed annually. Additionally, FRED has several private partners that provide monetary or in-kind support.

FRED increased fares on the FRED fixed route deviation service and FREDExpress from $.25 to $.50 in July 2009. This was the first fare increase in 11 years. Additionally, FRED eliminated free transfers in 2007. Passengers making transfers pay the regular fare of $0.50 for each transfer. Fares for employees of major partners that contribute $25,000 or more are prepaid with proper ID. Tables 1 and 2 show the current FRED fares as of August 2010.

**TABLE 1: FRED & FREDEXPRESS**

| Fare Category | Fare | Monthly Pass | Annual Pass |
|---|---|---|---|
| Adult-Regular Service | $.50 | $25.00 | $200.00 |
| Children Under 3 years | Free | Free | |
| Transfers | $.50 | | |
| MediCorp Health System | Free (with ID) | Free (with ID) | |
| University of Mary Washington | Free (with ID) | Free (with ID) | |
| Star Radio Group | Free (with ID) | Free (with ID) | |
| The Free Lance-Star | Free (with ID) | Free (with ID) | |
| HCA Healthcare | Free (with ID) | Free (with ID) | |

**TABLE 2: VRE FEEDER SERVICE**

| Fare Category | Fare |
|---|---|
| **VRE One-Way Single Fare** | $1.25 |
| **VRE-4-ticket Booklet** | $5.00 |
| **VRE Monthly Pass** | $40.00 |

FRED currently has a fleet of 31 vehicles, most of which are body-on-chassis buses with a useful life of five years. FRED service requires 22 revenue vehicles during its maximum period of service. This leaves FRED with nine spare vehicles and a spare ratio of 41 percent.

**FIGURE 1: FRED FIXED ROUTE SERVICE**

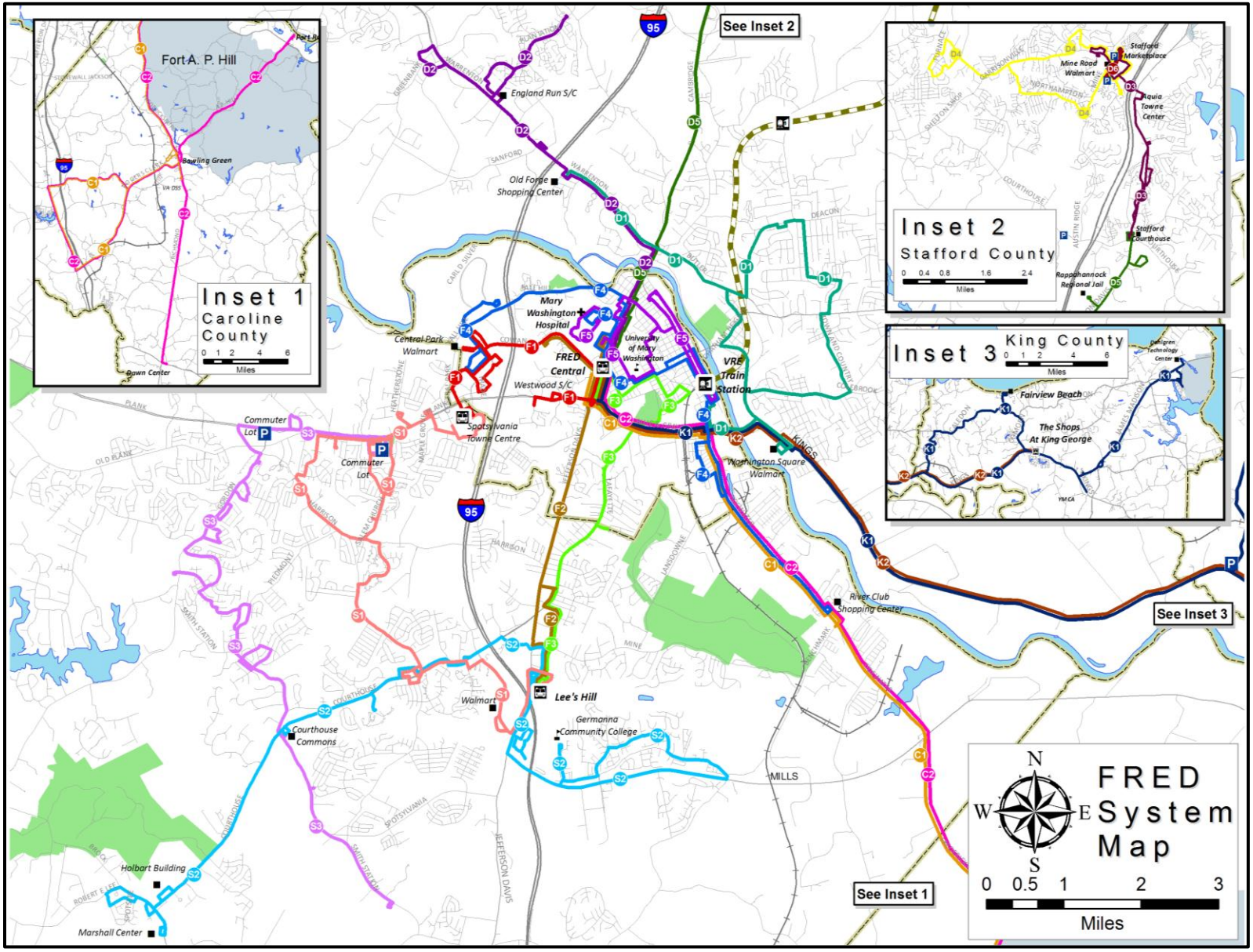


**FIGURE 2: FRED VRE FEEDER ROUTES**

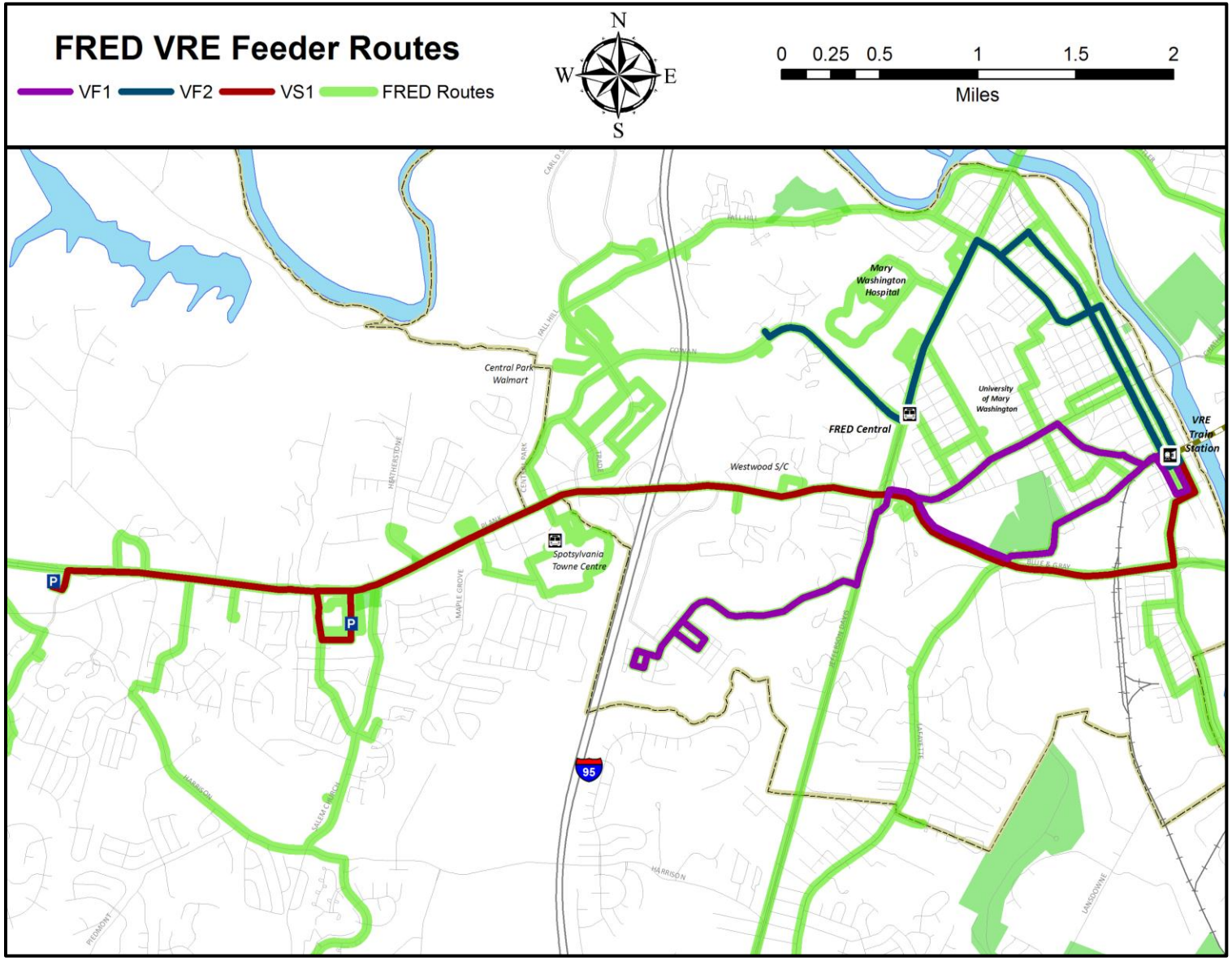


**FIGURE 3: FREDEXPRESS (UMW) ROUTES**

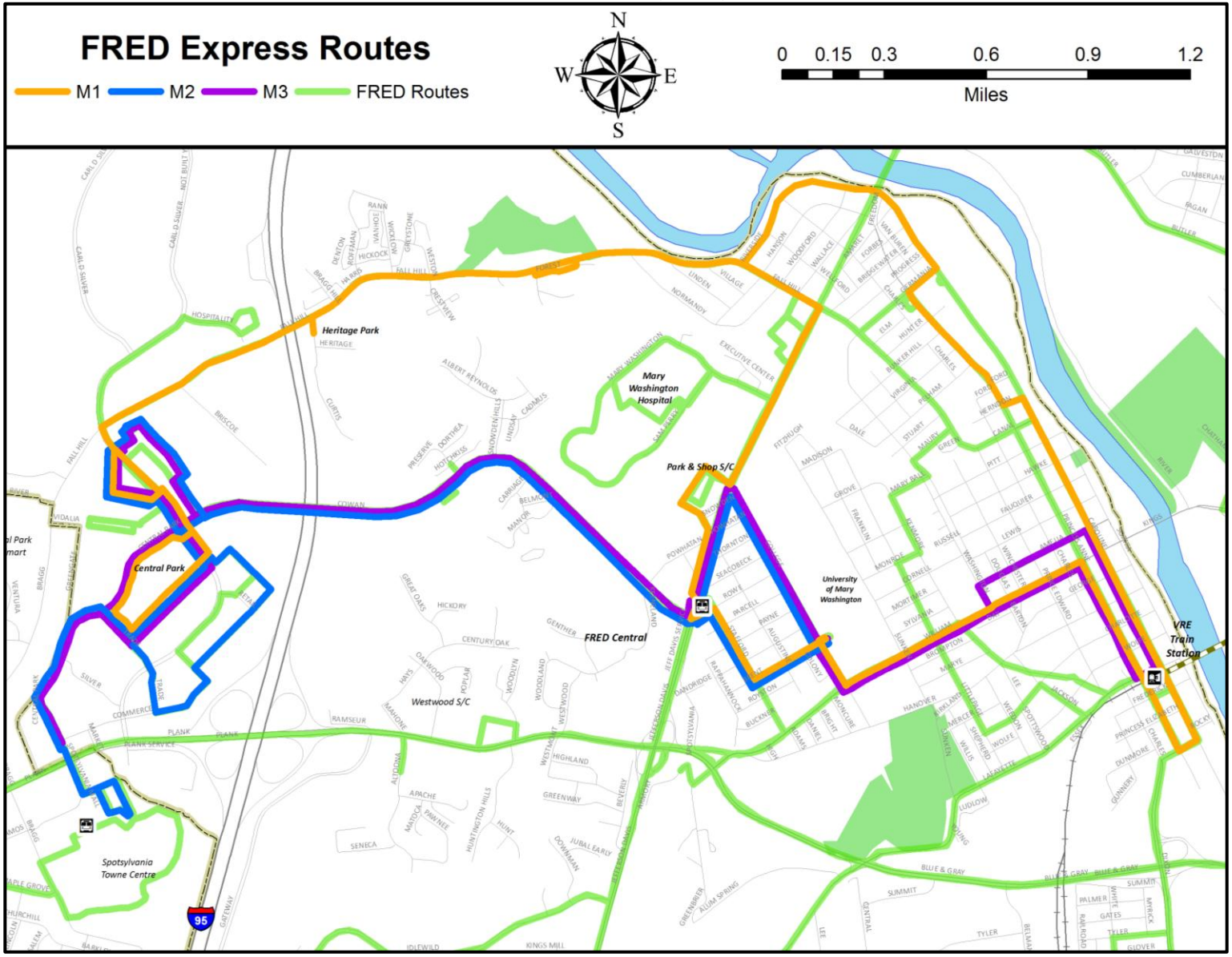


**TABLE 3: FRED FIXED ROUTE DEVIATION SERVICE**

| Route | Area Served | Hours of Operation | Key Destinations |
|---|---|---|---|
| **F1** | City of Fredericksburg | 8:30 am – 7:30 pm. | Central Park, Madonna House, The Evergreens, Monticello Apt, Belmont Apt, Snowden Village Apt, Hugh Mercer Elementary, Spotsylvania TC, Westwood SC |
| **F2** | City of Fredericksburg | 7:30 a.m. – 8:30 p.m. | Townsend Apt, Cedar Ridge Apt, Kings Mill, Wellington Lake Apt, Lee's Hill SC, Madonna House, The Evergreens, Monticello Apt, Belmont Apt, Hugh Mercer Elem. |
| **F3** | City of Fredericksburg | 7:30 a.m. – 8:30 p.m. | Lee's Hill Center, Olde Greenwich Townhouses, Wellington Woods Apts, Lee's Hill SC, Lafayette Square, Lafayette Blvd, VA Employment Commission, RACSB, FRED Central |
| **F4** | City of Fredericksburg | 7:30 a.m. – 8:30 p.m. | VRE Station, Dixon St. Park, UMW, Central Park, Fredericksburg SC, River Club SC, Park & Shop, Mary Washington Healthcare, Bragg Hill Family Life Center, Hazel Hill, Sylvania Heights, Mayfield, Crestview Apt, Forest Village Apt, Heritage Park Apt, Wegmans |
| **F5** | The Downtown Loop | 8:30 a.m. – 8:30 p.m. | FRED Central, UMW, VRE Station, DT Parking Garage, Visitors Ctr, Mary Washington Healthcare, Park & Shop, Fredericksburg SC, Dorothy Hart Community Center |
| **D1** | Southern Stafford County | 9:00 a.m. – 7:00 p.m. | VRE Station, Ferry Farm SC, Olde Forge SC, Wash. Sqr. Walmart, Woodlawn SC, YMCA |
| **D2** | Southern Stafford County | 8:00 a.m. – 8:00 p.m. | FRED Central, England Run Olde Forge SC, Geico |
| **D3** | Stafford County | 7:30 a.m. – 6:30 p.m. | Stafford Courthouse, Aquia Towne Center, Doc Stone Center, Walmart, Brafferton SC, Forreston Village SC |
| **D4** | Stafford County | 8:50 a.m. – 4:30 p.m. | Stafford Market Place, Doc Stone Center, Family Health Center, DMV, Vista Woods, Porter Library, Walmart, Northampton Blvd. |
| **D5** | Stafford County | 7:00 a.m. – 7:00 p.m. | FRED Central, Rappahannock Regional Jail, Stafford Courthouse |
| **D6** | Stafford County Express | Peak Period Only | North & South VDOT Commuter Lots |
| **S1** | Spotsylvania County | 8:00 a.m. – 8:00 p.m. | Lee's Hill Center, Hilltop Plaza, Wal-Mart at Southpoint II, Ukrop's, Spotsylvania Crossing SC, Meadows of Salem Run, Kings Crest Apt |
| **S2** | Spotsylvania County | 8:00 a.m. – 8:00 p.m. | Lees Hill Ctr, Breezewood SC, Hilltop Plaza, Brittany Commons, Asbury Manor, DMV, Courtland Commons, Holbert Bldg, Marshall Ctr, Germanna CC, Massaponax Outlets |
| **S3** | Spotsylvania County | 8:30 a.m. – 8:30 p.m. | Harrison Crossing, Legacy Woods, Deerfield, Salem Fields, Cortland Commons, YMCA |
| **K1** | King George County | 7:00 a.m. – 7:00 p.m. | FRED Central, Washington Square Plaza, Revercomb Bldg, Edgehill, Dahlgren, Sealston, Fairview Beach, The Shops at King George, King George SC |
| **K2** | King George County | 8:00 a.m. – 10:00 a.m.<br>2:00 p.m. – 4:00 p.m. | FRED Central, The Shops at King George, Sealston, Washington Square Plaza |
| **C1** | Caroline County | 7:15 a.m. – 5:45 p.m. | Bowling Green, Carmel Church, Corbin, FRED Central, Ladysmith |
| **C2** | Caroline County | 11:10 a.m. – 6:30 p.m. | Bowling Green, Dawn Center, Port Royal |

**TABLE 4: FREDEXPRESS SERVICE**

| Route | Area Served | Days/Hours | Key Destinations |
|---|---|---|---|
| **M1** | Downtown/Central Park | Saturday: 8:30 a.m. – 9:30 p.m.<br>Sunday: 9:30 a.m. – 6:30 p.m. | FRED Central, UMW, VRE Train Station, Central Park |
| **M2** | Central Park/Towne Centre | Thursday: 7:00 p.m. – 10:00 p.m.<br>Friday: 7:00 p.m. – 10:00 p.m.<br>Saturday: 9:00 a.m. – 10:00 p.m.<br>Sunday: 10:00 a.m. – 7:00 p.m. | UMW, Central Park, Spotsylvania Towne Centre, Cowan Blvd. |
| **M3** | Late Night Express | Friday: 10:00 p.m. – 1:00 a.m.<br>Saturday: 10:00 p.m. – 1:00 a.m. | UMW, Caroline Street, Central Park |

**TABLE 5: VRE FEEDER SERVICE**

| Route | Area Served | Hours | Key Destinations |
|---|---|---|---|
| **VS1** | Spotsylvania VRE Feeder Service | 4:45 a.m. – 7:50 a.m.<br>2:26 p.m. – 8:35 p.m. | Gordon Road Commuter Lot, Ukrop's Commuter Lot, Train Station |
| **VF1** | Fredericksburg VRE Feeder Service | 4:40 a.m. – 7:50 a.m.<br>2:26 p.m. – 8:35 p.m. | Idlewild, Maury Stadium, Train Station |
| **VF2** | Fredericksburg VRE Feeder Service | 4:50 a.m. – 7:50 a.m.<br>5:09 p.m. – 8:30 p.m. | The Preserves at Smith Run, Cowan Blvd, DT Fredericksburg |

## TDP Goals, Objectives and Standards

The TDP identifies goals for the FY 2011-2016 TDP timeframe as follows:

- Goal A: Provide a widely accessible public transit service to the region;
- GOAL B: Provide an affordable public transit service to the region through funding by grants and contributions from local, state and federal funding entities and public/private partnerships;
- GOAL C: Provide dependable transit service within the region;
- GOAL D: Increase the efficiency of the movement of people;
- GOAL E: Promote safety and security in maintaining and operating the FRED system to include personnel, ridership and facilities within the Fredericksburg region; and
- GOAL F: Comply with state and federal policies and regulations.

In addition to Goals and Objectives, the TDP identifies performance standards, which serve as a benchmark to guide the decision making process by revealing underperforming routes, as well as routes that could support additional service. This TDP work effort recommends several performance measures and benchmarks based on a review of FRED's monthly ridership activity and actual operating costs from FY2009. These benchmarks use year 2009 data; thus, FRED should reevaluate benchmarks as needed based on current data and trends. FRED fixed route service is divided among the City of Fredericksburg, the counties of Spotsylvania, Stafford, King George and Caroline; as well as VRE Feeder Service and the UMW routes, FREDExpress. Where appropriate, performance measures have also been divided among these categories.

### Ridership Service Productivity Measures

Ridership service productivity measures evaluate the effectiveness of the service. FRED's systemwide ridership service productivity measures are provided in Table 6. This is followed by benchmarks for passengers per revenue hour and revenue mile by route type in Tables 7 and 8.

**Table 6: FRED Systemwide Ridership Service Productivity Measures (January - December 2009)**

| Performance Measures | System Average |
|---|---|
| Passengers/Revenue Mile | 0.6 |
| Passengers/Revenue Hour | 8.7 |

**Table 7: FRED Passengers per Revenue Hour Performance Standards**

| Performance Measures | Fredericksburg | Stafford | Spotsylvania | King George | Caroline | VRE Feeder | FRED Ex |
|---|---|---|---|---|---|---|---|
| Pass/Rev Hr | 14.7 | 8.2 | 6.6 | 3.3 | 2.2 | 5.5 | 7.3 |

**Table 8: FRED Passengers per Revenue Mile Performance Standards**

| Performance Measures | Fredericksburg | Stafford | Spotsylvania | King George | Caroline | VRE Feeder | FRED Ex |
|---|---|---|---|---|---|---|---|
| Pass/Rev Mi | 1.3 | 0.6 | 0.3 | 0.2 | 0.1 | 0.7 | 0.7 |

### Cost Efficiency Measures

Cost efficiency measures reveal the efficiency and effectiveness of transit service as it relates to operating expenses, and include Farebox Recovery Ratio and Operating Cost per Passenger Trip. Changes in these measures indicate if a change in cost or demand is having a negative or positive impact on the service. FRED's current farebox recovery ratio is 6.6 percent. This calculation only includes revenues collected from the farebox and does not include partner funds. FRED has adopted as a target a farebox recovery ratio of 12 percent for fares and partner funds combined, which is closer to their peer average of 15 percent. Benchmarks for Operating Cost per Passenger Trip by route type are provided in Table 9.

**Table 9: FRED Operating Cost per Passenger Trip Performance Standards**

| FY2009 | Fredericksburg | Stafford | Spotsylvania | King George | Caroline | VRE Feeder | FRED Ex |
|---|---|---|---|---|---|---|---|
| Op. Cost/ Pass. Trip | $3.32 | $7.30 | $4.36 | $16.17 | $26.74 | $21.22 | $7.53 |

### Reliability Measures

While service reliability data is difficult to collect and analyze, it can provide useful information for needed changes and improvements to service. Reliability can be measured objectively through on-time performance and subjectively with passenger surveys. FRED should continue to sample FRED riders annually to survey their opinions on the reliability and quality of service provided as viewed by FRED users. Recommended on time performance measures are:

**90% on-time departures during peak travel hours; and**
**95% on-time departures during non-peak travel hours and weekends.**

## SERVICE AND SYSTEM EVALUATION

### EXISTING SERVICE EVALUATION

In 2009, 543,315 trips were taken on FRED service. This total includes all FRED fixed route service, deviation service, VRE feeder service, and FREDExpress service. Figure 4 shows FRED ridership by route type. Figure 5 shows the annual ridership by route.

**FIGURE 4: 2009 MONTHLY RIDERSHIP**

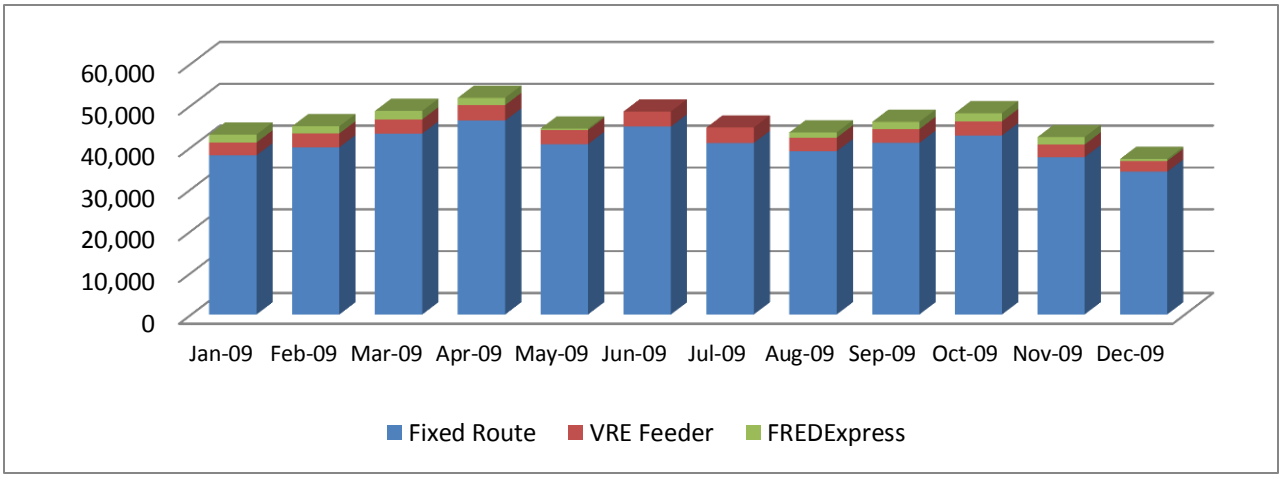
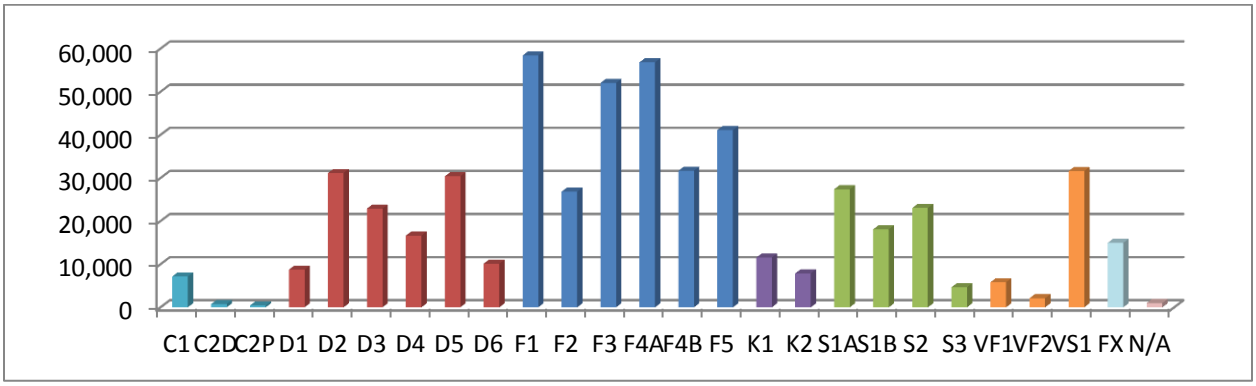



**FIGURE 5: 2009 ANNUAL RIDERSHIP BY ROUTE**




FRED fixed route service is provided in several jurisdictions: City of Fredericksburg, Spotsylvania County, Stafford County, King George County and Caroline County. Additionally, FRED provides feeder service to the VRE train station and Thursday and Friday evening and weekend service via the FREDExpress with the financial support of the University of Mary Washington. Figure 6 shows the total ridership in 2009 by route type including fixed routes by jurisdiction, VRE Feeder and FREDExpress. Figure 7 shows the percentage of total 2009 ridership each route type represents. Figure 8 shows 2009 monthly ridership by each fare category based on its percentage of total monthly ridership.

**FIGURE 6: 2009 ANNUAL RIDERSHIP BY ROUTE TYPE/JURISDICTION**

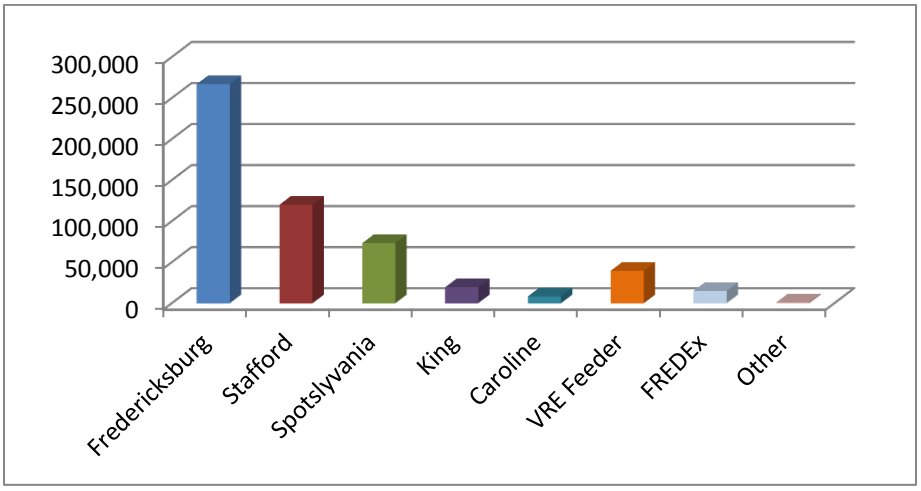



**FIGURE 7: 2009 PERCENTAGE OF TOTAL RIDERSHIP BY ROUTE TYPE/JURISDICTION**

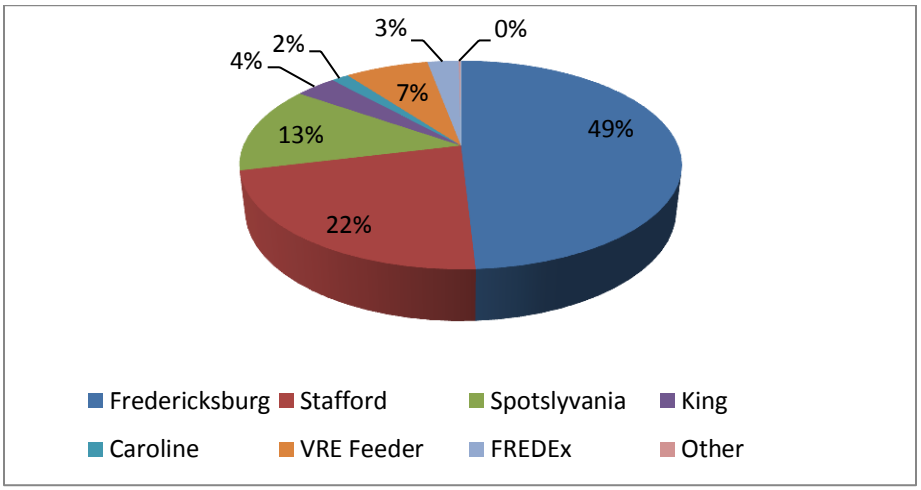
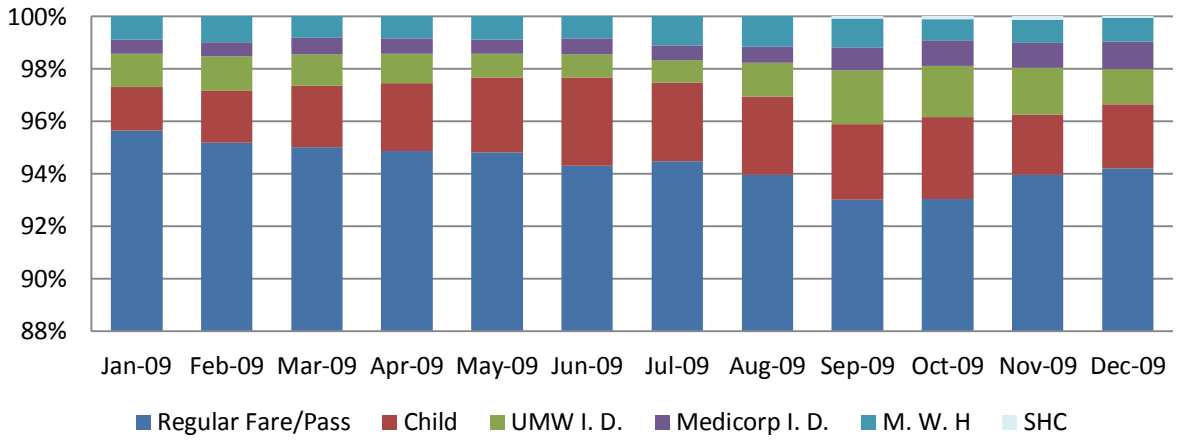



**FIGURE 8: 2009 MONTHLY RIDERSHIP BY PERCENTAGE OF FARE CATEGORY**



## HISTORICAL PERFORMANCE EVALUATION (FIVE YEAR ANALYSIS)

Performance standards are used to evaluate FRED serve based on data collected from the National Transit Database (NTD) over the past five years (2004-2008), as shown in Table 10. Performance is based on the following measures:

- **Service Effectiveness** is measured by the ratio of passenger trips per revenue hour. Figure 9 shows the passengers per revenue hour.
- **Passengers per Revenue Mile** is another metric that reflects service productivity. Figure 10 presents riders per revenue mile.
- **Service Efficiency** is measured by the ratio of operating costs per revenue hour, and provides an overview of how efficiently the service is operating. Figure 11 shows the operating costs per revenue hour for the years 2004 to 2008.
- **Cost Effectiveness** reveals how effectively the agency is providing the service based on the ratio of operating costs per passenger trip, as shown in Figure 13.
- **Subsidy per Passenger Trip** measures the true cost of a passenger trip to FRED jurisdictions. This figure is the operating cost minus the fare revenue as reported to the NTD per passenger trip, as shown in Figure 14.

**TABLE 10 PERFORMANCE EVALUATION NTD DATA**

| Year | Passenger Trips | Revenue Hours | Revenue Miles | O&M Costs | Farebox Revenue |
|---|---|---|---|---|---|
| 2004 | 277,146 | 26,806 | 431,652 | $1,156,282 | 32,157 |
| 2005 | 328,724 | 38,362 | 589,710 | $1,440,682 | 45,830 |
| 2006 | 354,472 | 48,734 | 832,264 | $1,828,070 | 50,416 |
| 2007 | 361,838 | 51,186 | 889,839 | $2,396,950 | 54,963 |
| 2008 | 427,394 | 65,531 | 986,916 | $3,290,878 | 116,662 |
| *2009** | *559,699* | *61,948* | *984,596* | *$3,379,012* | *159,741* |

*PRELIMINARY 2009 FIGURES NOT REPORTED IN NTD

**FIGURE 9: PASSENGER TRIPS PER REVENUE HOUR**

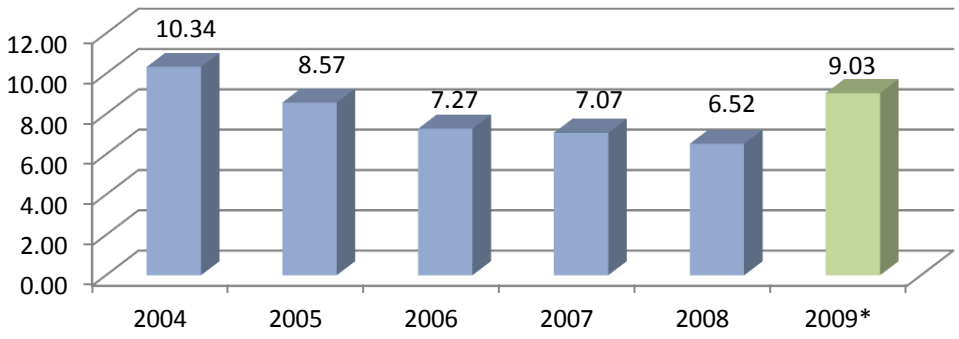


**FIGURE 10: PASSENGER PER REVENUE MILE**

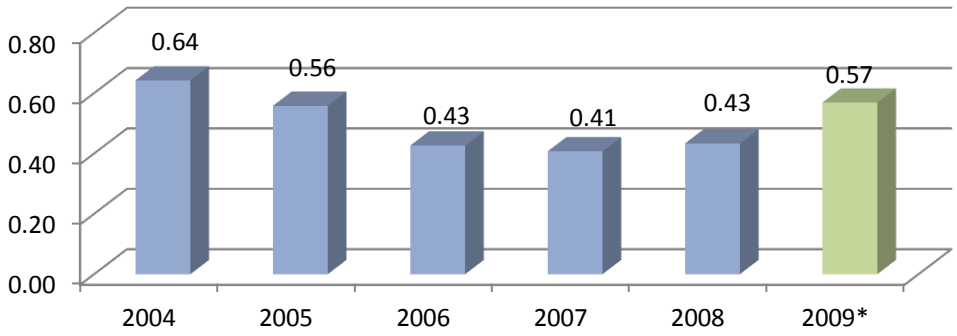



**FIGURE 11: O&M COST PER REVENUE HOUR**

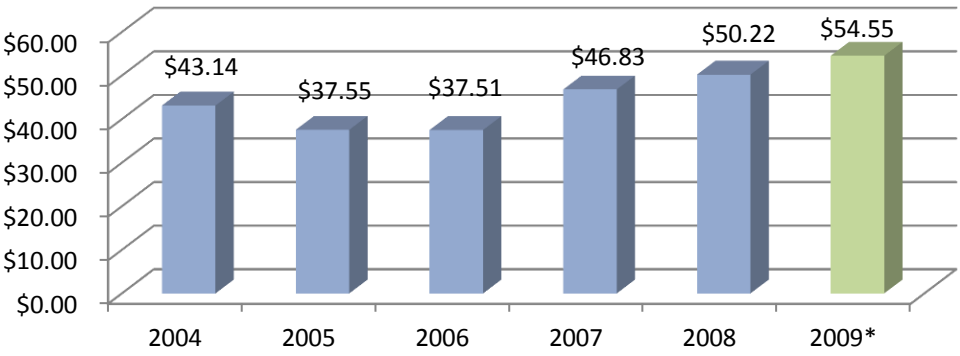



**FIGURE 12: OPERATING COSTS PER PASSENGER TRIP**

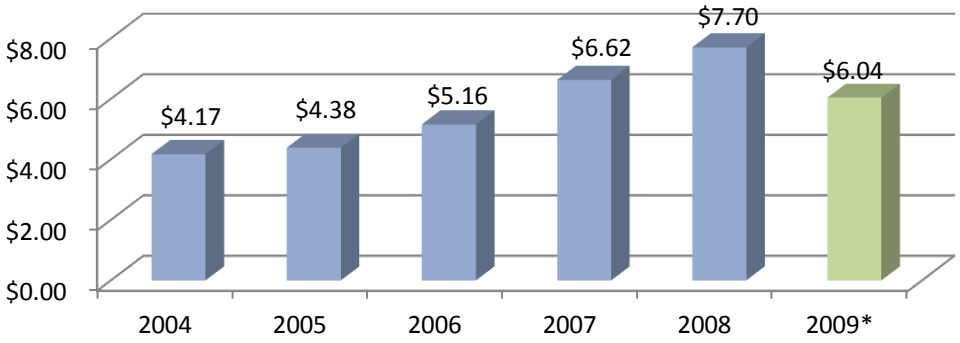
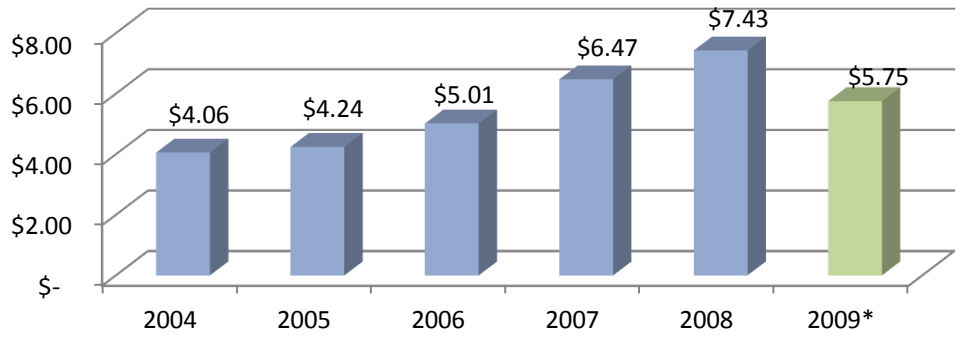



**FIGURE 13: SUBSIDY PER PASSENGER TRIP**



## PEER REVIEW

As part of this TDP process, a peer analysis compares performance measures for FRED with five peer systems that have similar operational size, service area and demographics to gauge improvements that may be warranted. FY2008 data from the National Transit Database (NTD) is used to compare the transit systems. While the peer analysis does not capture all of the unique characteristics found in Fredericksburg, it does provide a basis for comparison to evaluate the performance of the system. Table 11 shows the peer agencies used to compare with FRED. This is followed by a summary of the key findings for each performance measure identified in the peer analysis.

**TABLE 11: FINAL PEER SELECTION**

| Transit Agency | Location | Service Area | | Total Peak Vehicles |
|---|---|---|---|---|
| | | Sq. Miles | Pop. | |
| Williamsburg Area Transport (WAT) | Williamsburg, VA | 144 | 57,000 | 24 |
| Annapolis DOT (Annapolis Transit) | Annapolis, MD | 100 | 90,000 | 18 |
| Monongalia County Urban Transit (Mt. Line Transit) | Morgantown, WV | 201 | 73,278 | 27 |
| Middletown Transit District (MTD) | Middletown, CT | 193 | 90,320 | 15 |
| Charles County (VanGO) | Charles County, MD | 458 | 120,564 | 27 |
| **Peer Average** | | **219** | **86,232** | **22** |
| *FREDericksburg Regional Transit (FRED)* | *Fredericksburg, VA* | *242* | *113,716* | *22* |

- *Vehicle Utilization:* FRED is within range of the peer system average for number of vehicles available and vehicles operated for maximum service. FRED's revenue miles and revenue hours per peak vehicle are only slightly higher than the peer average, at 110 percent and 111 percent respectively. As these ratios increase, it indicates a more intense use of the vehicles; however, it can also lead to more wear and tear on the vehicles and thus impact reliability. Based on the peer systems, FRED is efficiently using the vehicles available.
- *Service Supplied:* FRED's revenue hours and revenue miles per service area population and service area square mile are lower than the peer average in all four categories. FRED supplies 84 percent of the peer average in revenue hours per person, 81 percent of the peer average in revenue miles per person, 82 percent of the peer average in revenue hours per square mile, and 84 percent of the peer average in revenue miles per square mile. Because FRED's population and service area are larger than many of the peer systems, there are likely portions of the service area that are underserved based on the peer systems' ratios.
- *Service Productivity:* FRED was lower than the peer average for all three service productivity measures; passenger trips per service area population (37%), passenger trips per revenue hour (46%), and passenger trips per revenue mile (45%).
- *Cost Efficiency:* FRED has a higher cost per passenger trip compared to the peer average (146%); however, FRED's cost per revenue hour and revenue mile is lower than the peer average. This indicates that while FRED may be operating FRED service in a cost efficient manner; FRED's passenger subsidy is much higher than the peer agencies. Although FRED is a cost effective operator, it is a less than cost effective trip provider. This may be due to the large number of

hours and miles FRED operates in King George and Caroline Counties, both of which are sparsely populated.

- *Revenue Vehicle Maintenance Performance:* FRED has 214 percent more vehicle failures per 1,000 miles than the peer average; yet, vehicle age, make and maintenance policies can directly impact these results. Additionally, agencies may report maintenance performance differently, thus reducing the reliability of the information available for maintenance. With a large fleet of vehicles with a five-year life span, compared to other vehicles that may have a 10-year life span, the life of FRED's fleet may be shorter than the peer systems.
- *Farebox Revenues:* FRED has the lowest farebox revenue ratio among all of the peer systems at 3.5 percent. The elimination of free transfers and a fare increase in July 2009 should mark a rise in this ratio in the future.
- *Source of O&M Funds:* FRED relies heavily on federal sources for operating funds, with local contributions providing the lowest percentage behind fares at 9.8 percent. New census data in 2010 may impact the level of funding FRED receives, resulting in the need for a larger local share.
- *Source of Capital Funds:* Eighty percent of FRED's capital funds came from federal sources and 12.6 percent came from local sources. As grants expire and FRED service expands, capital funding may become a challenge in the future.

### ON-BOARD SURVEY FINDINGS

An on-board survey conducted in March 2010 as part of this TDP effort included questions about origin and destination as well as rider characteristics. All FRED routes were surveyed from the beginning to end of service with a few exceptions during the week of March 15 through March 20, 2010. A total of 982 surveys were returned, which is 44 percent of the average daily ridership during the dates of the survey.

The on-board survey included three sections of questions, I. Tell Us About Your Trip, II. Tell Us About Yourself, and III. Tell Us How We Can Make FRED Better. Section I asks questions about the trip, such as origin and destination with specific addresses, bus transfers, mode of access to the bus stop and destination, as well as how often the respondent rides FRED service. Section II asks key demographic and socioeconomic questions, such as number of vehicles in the household, whether the passenger has a valid driver's license, gender, employment status, age, household income and English as a second language. Section III includes an open question where passengers fill in their comments.

#### Trip Purpose

Most FRED riders on regular weekday service are making trips originating from home (47%) and traveling to work (25%); however, most FREDExpress riders are starting at home (44%) and ending their trip at shopping destinations.

Approximately 30 percent of FRED fixed route passengers overwhelmingly make a transfer to or from another bus and most wait 10 minutes or less for their transfer. FRED riders walk to their bus stop (78%) and walk to their destination (76%) after getting off the bus. Riders on VRE Feeder service almost all

drive and park a car prior to boarding FRED. Most riders only walk zero to three blocks to their bus stop or destination. Finally, a majority of FRED riders use the service four or more days per week (54%).

**Rider Demographics**

While the trip purpose among the various route types do not vary as much, the FRED fixed route rider is a different rider than those who use FREDExpress and the VRE Feeder service.

The FRED fixed route rider is highly dependent on the transit service for mobility. Fifty-seven percent have no access to a vehicle and 61 percent do not have a valid driver's license. Fixed route riders are equally split between females and males, are mainly between the ages of 40-59 (36%) and 25-39 (31%). Fixed route riders are employed full-time (34%), part-time (18%) or unemployed (27%). Half of the fixed route riders come from a household with incomes of less than $20,000 a year. Finally, 16 percent do not speak English as their primary language.

Although the FREDExpress service is centered on the University of Mary Washington, it is available to the general public as well as UMW students and staff. Most UMW student riders are freshmen who are not permitted to have automobiles on campus. Thus, most FREDExpress riders do not have access to a vehicle (72%), and 54 percent do not have a valid driver's license. FREDExpress riders are 59 percent female and are younger than the fixed route riders, between the ages of 19-24 (32%) or 25-39 (26%). Thirty-three percent of FREDExpress riders are unemployed and 23 percent are college/university students. Most FREDExpress riders earn less than $20,000 a year (59%). Twenty-one percent of FREDExpress riders speak English as a second language.

Almost all passengers on the VRE Feeder Service have access to a vehicle, with many having access to two vehicles in their household (39%); all have a valid driver's license. Riders are 61 percent male and age 40-59 (76%). All of the riders on VRE Feeder Service are employed full time and a majority (54%) earns $80,000 or more. Finally, 18 percent of these riders speak English as a second language.

**PUBLIC OUTREACH EFFORTS**

In order to solicit input from users and non-users of FRED transit service, several public outreach efforts were conducted throughout the TDP process. FRED Supervisors and bus operators provided frontline input as the eyes and ears of the system. In addition to meeting with FRED staff, a meeting with the members of the Public Transit Advisory Board was held on February 3, 2010. Passenger Focus Groups were conducted on May 4th and 5th at various transfer locations throughout the service area. A meeting with FAMPO staff on July 6, 2010 provided added insight for the needs assessment conducted in Chapter 4 of this TDP.

**FACILITY AND EQUIPMENT CHARACTERISTICS**

The City of Fredericksburg owns the Lawrence A. Davies Transit Center (FRED Central), which opened in October 2007. The facility serves as the main transfer center and houses the customer service, administrative and dispatch functions for FRED. The maintenance facility is located in a portion of a building located approximately one mile north of FRED Central on Jefferson Davis Highway.

As of December 2009, the average age of FRED's 31 transit vehicles was eight years old. A majority of FRED's fleet includes body-on-chassis buses with a useful life of five years. Thus, many of FRED's vehicles are due for replacement. In April/May 2010, FRED received eight replacement vehicles and an additional four vehicles have been ordered. The remainder of the fleet will be due for replacement during the timeframe of this TDP.

FRED recently purchased and installed Global Positioning Systems (GPS) on FRED vehicles. The implementation of the GPS will provide FRED staff and passengers with real time arrival and departure information, permit vehicles to be tracked along their routes and measure vehicle speed.

### TITLE IV AND TRIENNIAL REVIEW

FRED's Title VI program is updated annually. FRED completed a Triennial Review in FY2008, with all findings closed in August 2008.

### SERVICE COVERAGE CHARACTERISTICS

Population and employment estimates for 2006 and 2015 by TAZ from FAMPO are used to estimate the number of residents and employees that live and work within a ¼ mile walk radius and ¾ mile deviation radius of FRED's regular fixed route service, as shown in Table 12. Fixed-route transit services are generally more successful in areas with high household and employment densities. Thus, one means of evaluating transit is to identify areas served that have attained at least the minimum densities, or thresholds, sufficient to support fixed route transit service. Using density thresholds, transit propensity is estimated for 2006 and 2015 using household and employment data for each TAZ. FRED service currently serves virtually all transit supportive areas.

**TABLE 12: FREDERICKSBURG REGIONAL POPULATION AND EMPLOYMENT WITHIN A ¼ AND ¾ MILE RADIUS OF FRED**

| | Residents | | | | Employees | | | |
|---|---|---|---|---|---|---|---|---|
| Year | ¼ Mile from FRED | ¾ Mile from FRED | Region Total | ¼ / ¾ % Of Total | ¼ Mile from FRED | ¾ Mile from FRED | Region Total | ¼ / ¾ % of Total |
| **2006** | 93,076 | 167,607 | 306,402 | 30.4%/57.7% | 55,776 | 79,509 | 109,005 | 51.2%/72.9% |
| **2015** | 111,382 | 207,601 | 394,369 | 28.2%/52.6% | 59,620 | 94,275 | 144,106 | 41.4%/65.4% |

The George Washington Region 2035 Long Range Transportation Plan provides the Fredericksburg Region with a planning document for long term transportation projects, including road improvements, bicycle and pedestrian facilities and public transportation. In addition to the 2035 Long Range Transportation Plan, comprehensive planning documents and land use maps provide further insight toward future development and land use plans that could impact FRED service. The George Washington Region Bicycle and Pedestrian Plan identifies existing and planned bicycle and pedestrian facilities in the FRED service area. Many of the existing and proposed trails have connections to FRED service. All of FRED buses have bicycle racks and in 2009, FRED routes carried 5,422 bikes.

## TRANSIT SERVICE AND FACILITY NEEDS

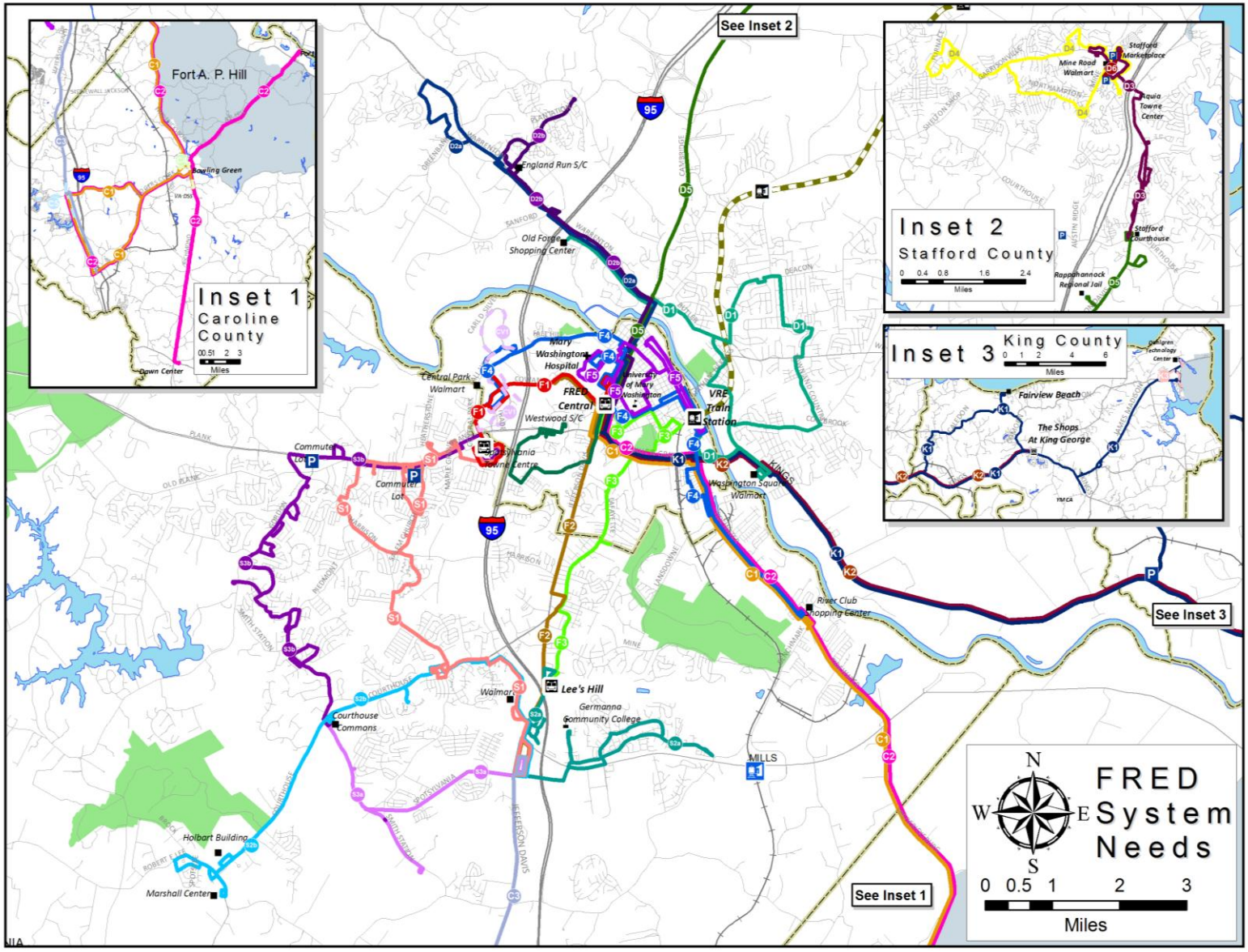
Based on the analysis in the first three chapters of the TDP, the following Table 13 lists the unconstrained service needs by jurisdiction identified in this TDP. This is followed by a map of the unconstrained needs in Figure 14 and the unconstrained estimated service plan operating costs in FY2011 dollars in Tables 14 through 17. Table 18 and 19 show the unconstrained estimated vehicle and capital needs.

**TABLE 13: SUMMARY OF PROPOSED SERVICE IMPROVEMENTS**

| Service Improvement | Jurisdiction | Span & Frequency |
|---|---|---|
| **New Fixed Route Service** | | |
| **Celebrate Virginia Circulator** | City of Fredericksburg | 60-Minute Frequency, Weekdays; 10:00 a.m. - 10:00 p.m.; Saturday 10:00 a.m. -11:00 p.m. and Sunday 10:00 a.m. -7:00 p.m. |
| **F6-Idlewild to FRED Central** | City of Fredericksburg | 60-Minute Frequency, Weekdays, 7:00 a.m. - 9:00 p.m. |
| **C3 - Ladysmith/ Carmel Church to Cosner's Corner** | Caroline County | 120-Minute Frequency, Weekdays, 9:00 a.m. - 5:00 p.m. |
| **C4-Bowling Green Circulator** | Caroline County | 60-Minute Frequency, Weekdays, 9:00 a.m. - 5:00 p.m. |
| **C5 - Lady Smith Circulator** | Caroline County | 60-Minute Frequency, Weekdays, 9:00 a.m. - 5:00 p.m. |
| **C6 – Carmel Church Circulator** | Caroline County | 60-Minute Frequency, Weekdays, 9:00 a.m. - 5:00 p.m. |
| **K3-Dahlgren Circulator** | King George County | 60-Minute Frequency, Weekdays, 9:00 a.m. - 5:00 p.m. |
| **VS2 - Lee Park VRE Feeder** | Spotsylvania County | VRE Feeder Service |
| **Increased Span of Service/Route Modification/Frequency Improvements** | | |
| **F1 - FRED Central to Spotsylvania Towne Centre** | City of Fredericksburg | Increased Frequency, Restructured Route Alignment and Expanded Service Hours |
| **F2 - FRED Central to Lees Hill** | City of Fredericksburg | Restructured Route to Service Cosner's Corner, Expanded Service Hours |
| **F3 - FRED Central to Lees Hill Center** | City of Fredericksburg | Increased Frequency to 30 minutes, Expanded Service Hours |
| **F4 - FRED Central to Central Park/River Club** | City of Fredericksburg | Increased Frequency to 30 minutes, Expanded Service Hours |
| **F5 - The Downtown Loop** | City of Fredericksburg | Increased Frequency to 30 minutes, Expanded Service Hours |
| **S1- Cosner's Corner to Spotsylvania Towne Centre** | Spotsylvania County | Expanded Service Hours, Restructured to serve Cosner's Corner |
| **S2a - Lees Hill Center to Germanna Community College, S2b - Marshall Center to Cosner's Corner** | Spotsylvania County | Split into two routes; restructured to serve Cosner's Corner, Increased Frequency to 60-Minutes, Expanded Service Hours, |
| **S3a - Courtland Commons to Cosner's Corner; S3b - Courtland Commons to Spotsylvania Towne Centre** | Spotsylvania County | Split into two routes; restructured to serve Cosner's Corner and Spotsylvania Towne Centre; Increased frequency to 60-minutes; Expanded Service Hours |
| **D1 - Southern Stafford County** | Stafford County | Increased Service Hours |

| | | |
|---|---|---|
| **D2a - FRED Central to Geico; D2b - FRED Central to English Village** | Stafford County | Split Into Two Routes; Expanded to Village Parkway Walmart; Increased Service Hours |
| **D3- Stafford Courthouse; Aquia Towne Center; Stafford Marketplace** | Stafford County | Increased Frequency to 30 minutes, Expanded Service Hours |
| **D4 - Stafford Marketplace to Porter Library** | Stafford County | Expanded Service Hours |
| **D5- FRED Central to Stafford Courthouse** | Stafford County | Expanded Service Hours; Increased Frequency to 30 Minutes |
| **C1-FRED-Bowling Green-Carmel Church-Ladysmith** | Caroline County | Increased Frequency to 60 Minutes |
| **C2 - FRED Central-CSC/DSS-Dawn Center/Port Royal** | Caroline County | Increased Frequency to 60 Minutes |
| **K1-FRED Central - King George Shopping Center** | King George | Increased Frequency to 60 Minutes |
| **K2 - FRED Central - The Shops at King George** | King George | Increased Frequency to 60 Minutes |
| **Weekend Service** | | |
| **Routes F1, F2, F3, F4, F5** | City of Fredericksburg | Added Saturday and Sunday Service |
| **Routes D2a, D2b, D3, D4, D5** | Stafford County | Added Saturday and Sunday Service |
| **Route S1, S2a** | Spotsylvania County | Added Saturday and Sunday Service |

**FIGURE 0.1 UNCONSTRAINED SYSTEM NEEDS**



## TABLE 14: WEEKDAY UNCONSTRAINED SERVICE PLAN ESTIMATED OPERATING COSTS

| Rte. # | Route Pattern | Existing Rev. Hrs | Existing Rev. Miles | Existing Daily Buses | Existing Annual Operating Costs | Expanded Rev. Hours | Expanded Rev. Miles | Expanded Daily Buses | Expanded Annual Operating Costs | Total Rev. Hours | Total Rev. Miles | Total Daily Buses | Total Annual Operating Costs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| F1 | FRED Central to Spotsylvania Towne Centre | 2,805 | 35,091 | 1.0 | $154,275 | 4,335 | 38,594 | 1.0 | $238,425 | 7,140 | 73,685 | 2.0 | $392,700 |
| F2 | FRED Central to Cosner's Corner Via J.D.H | 3,315 | 44,454 | 1.0 | $182,325 | 510 | 17,473 | 0.0 | $28,050 | 3,825 | 61,927 | 1.0 | $210,375 |
| F3 | FRED Central to Lees Hill Center Via Lafayette | 3,315 | 47,736 | 1.0 | $182,325 | 4,335 | 62,424 | 1.0 | $238,425 | 7,650 | 110,160 | 2.0 | $420,750 |
| F4 | FRED Central -Central Park | 2,805 | 35,904 | 1.0 | $154,275 | 4,845 | 62,016 | 1.0 | $266,475 | 7,650 | 97,920 | 2.0 | $420,750 |
| | FRED Central - River Club | 3,060 | 37,148 | 1.0 | $168,300 | 4,590 | 55,723 | 1.0 | $252,450 | 7,650 | 92,871 | 2.0 | $420,750 |
| F5 | FRED Central - The Downtown Loop | 3,060 | 30,906 | 1.0 | $168,300 | 4,080 | 41,208 | 1.0 | $224,400 | 7,140 | 72,114 | 2.0 | $392,700 |
| *F6* | *NEW-Idlewilde-Westwood S.C. - Fred Central* | *0* | *0* | *0.0* | *$0* | *3,570* | *26,882* | *1.0* | *$196,350* | *3,570* | *26,882* | *1.0* | *$196,350* |
| *CV1* | *Celebrate Virginia Circulator* | *0* | *0* | *0.0* | *$0* | *3,060* | *46,084* | *1.0* | *$168,300* | *3,060* | *46,084* | *1.0* | *$168,300* |
| S1 | Cosner's Corner - Spotsylvania Towne Centre | 5,100 | 81,881 | 2.0 | $280,500 | 6,120 | 96,069 | 2.0 | $336,600 | 11,220 | 177,949 | 4.0 | $617,100 |
| S2 | Lees Hill Center - Marshall Center | 1,530 | 29,422 | 0.5 | $84,150 | 2,040 | 45,477 | 0.5 | $112,200 | 3,570 | 74,899 | 1.0 | $196,350 |
| | Lees Hill Center - Germanna College | 1,530 | 20,150 | 0.5 | $84,150 | 2,040 | 33,007 | 0.5 | $112,200 | 3,570 | 53,157 | 1.0 | $196,350 |
| S3a | Spots. Towne Centre to Courtland Commons | 3,060 | 47,629 | 1.0 | $168,300 | 3,060 | 37,868 | 1.0 | $168,300 | 6,120 | 85,496 | 2.0 | $336,600 |
| S3b | Courtland Commons to Cosner's Corner | 0 | 0 | 0.0 | $0 | 3,060 | 34,762 | 1.0 | $168,300 | 3,060 | 34,762 | 1.0 | $168,300 |
| D1 | Southern Stafford - Train Station - YMCA | 2,550 | 51,587 | 1.0 | $140,250 | 510 | 10,226 | 0.0 | $28,050 | 3,060 | 61,812 | 1.0 | $168,300 |
| D2a | Southern Stafford - FRED Central - GEICO | 3,060 | 49,694 | 1.0 | $168,300 | 510 | 3,963 | 0.0 | $28,050 | 3,570 | 53,657 | 1.0 | $196,350 |
| D2b | Southern Stafford - FRED Central - English Village | 0 | 0 | 0.0 | $0 | 3,570 | 51,765 | 1.0 | $196,350 | 3,570 | 51,765 | 1.0 | $196,350 |
| D3 | Stafford Courthouse - Aquia Towne Center | 2,805 | 30,939 | 1.0 | $154,275 | 4,335 | 47,815 | 1.0 | $238,425 | 7,140 | 78,754 | 2.0 | $392,700 |
| D4 | Stafford Marketplace - Porter Library | 2,040 | 27,907 | 1.0 | $112,200 | 1,020 | 13,954 | 0.0 | $56,100 | 3,060 | 41,861 | 1.0 | $168,300 |
| D5 | FRED Central to Stafford Courthouse | 3,060 | 66,708 | 1.0 | $168,300 | 4,080 | 88,944 | 1.0 | $224,400 | 7,140 | 155,652 | 2.0 | $392,700 |
| D6 | Stafford County Express - North/South VDOT | 1,020 | 10,200 | 1.0 | $56,100 | 0 | 0 | 0.0 | $0 | 1,020 | 10,200 | 1.0 | $56,100 |
| C1 | FRED-Bowling Green-Carmel Church-Ladysmith | 2,550 | 86,700 | 1.0 | $140,250 | 1,530 | 52,020 | 1.0 | $84,150 | 4,080 | 138,720 | 2.0 | $224,400 |
| C2 | FRED Central-CSC/DSS-Dawn Center/Port Royal | 2,040 | 39,127 | 1.0 | $112,200 | 2,040 | 39,127 | 1.0 | $112,200 | 4,080 | 78,254 | 2.0 | $224,400 |
| *C3* | *Ladysmith, Carmel Church, Cosner's Corner* | *0* | *0* | *0.0* | *$0* | *2,040* | *44,880* | *1.0* | *$112,200* | *2,040* | *44,880* | *1.0* | *$112,200* |
| *C4* | *Caroline County - Bowling Green Circulator* | *0* | *0* | *0.0* | *$0* | *2,040* | *20,400* | *1.0* | *$112,200* | *2,040* | *20,400* | *1.0* | *$112,200* |
| *C5* | *Caroline County - Ladysmith Circulator* | *0* | *0* | *0.0* | *$0* | *2,040* | *24,480* | *1.0* | *$112,200* | *2,040* | *24,480* | *1.0* | *$112,200* |
| *C6* | *Caroline County - Carmel Church Circulator* | *0* | *0* | *0.0* | *$0* | *2,040* | *24,480* | *1.0* | *$112,200* | *2,040* | *24,480* | *1.0* | *$112,200* |
| *K3* | *Dahlgren Circulator* | *0* | *0* | *0.0* | *$0* | *2,040* | *30,600* | *1.0* | *$112,200* | *2,040* | *30,600* | *1.0* | *$112,200* |
| K1 | FRED Central - King George Shopping Center | 3,060 | 91,777 | 1.0 | $168,300 | 2,550 | 76,481 | 1.0 | $140,250 | 5,610 | 168,258 | 2.0 | $308,550 |
| K2 | FRED Central - The Shops at King George | 1,020 | 38,760 | 1.0 | $56,100 | 1,020 | 38,760 | 0.0 | $56,100 | 2,040 | 77,520 | 1.0 | $112,200 |
| VF1 | VRE Feeder-Idlewild-Train Station | 2,295 | 16,218 | 1.0 | $126,225 | 0 | 0 | 0.0 | $0 | 2,295 | 16,218 | 1.0 | $126,225 |
| VF2 | VRE Feeder - Cowan Blvd.-Train Station | 1,530 | 11,322 | 1.0 | $84,150 | 0 | 0 | 0.0 | $0 | 1,530 | 11,322 | 1.0 | $84,150 |
| VS1 | VRE Feeder - Gordon Rd-Ukrops-Train Station | 3,188 | 22,542 | 2.0 | $175,313 | 0 | 0 | 0.0 | $0 | 3,188 | 22,542 | 2.0 | $175,313 |
| *VS2* | *VRE Feeder - Lee Park - Proposed VRE Station* | *0* | *0* | *0.0* | *$0* | *2,486* | *20,553* | *1.0* | *$136,744* | *2,486* | *20,553* | *1.0* | *$136,744* |
| **TOTALS** | | **59,798** | **953,802** | **24.0** | **$3,288,863** | **79,496** | **1,186,032** | **24.0** | **$4,372,294** | **139,294** | **2,139,834** | **48.0** | **$7,661,156** |

FREDExpress Weekday

| Rte. # | Route Pattern | Existing Rev. Hrs | Existing Rev. Miles | Existing Daily Buses | Existing Annual Operating | Expanded Rev. Hours | Expanded Rev. Miles | Expanded Daily Buses | Expanded Annual Operating | Total Rev. Hours | Total Rev. Miles | Total Daily Buses | Total Annual Operating Costs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M2 | UMW/Central Park/Spotsylvania TC | 198 | 1,903 | 0.0 | $10,890 | 0 | 0 | 0.0 | $0 | 198 | 1,903 | 0.0 | $10,890 |
| **Thur/Fri** | | **198** | **1,903** | **0.0** | **$10,890** | **0** | **0** | **0.0** | **$0** | **198** | **1,903** | **0.0** | **$10,890** |
| M3 | UMW/Downtown/Central Park Late Night | 99 | 1,113 | 0.0 | $5,445 | 0 | 0 | 0.0 | $0 | 99 | 1,113 | 0.0 | $5,445 |
| **Fri** | | **99** | **1,113** | **0.0** | **$5,445** | **0** | **0** | **0.0** | **$0** | **99** | **1,113** | **0.0** | **$5,445** |

## TABLE 15: SATURDAY UNCONSTRAINED SERVICE PLAN ESTIMATED OPERATING COSTS

| Rte. # | Route Pattern | Existing Rev. Hrs | Existing Rev. Miles | Existing Daily Buses | Existing Annual Operating Costs | Expanded Rev. Hours | Expanded Rev. Miles | Expanded Daily Buses | Expanded Annual Operating Costs | Total Rev. Hours | Total Rev. Miles | Total Daily Buses | Total Annual Operating Costs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| F1 | FRED Central to Spotsylvania Towne Centre | 0 | 0 | 0.0 | $0 | 676 | 6,963 | 1.0 | $37,180 | 676 | 6,963 | 1.00 | $37,180 |
| F2 | FRED Central to Cosner's Corner Via J.D.H | 0 | 0 | 0.0 | $0 | 676 | 10,816 | 1.0 | $37,180 | 676 | 10,816 | 1.00 | $37,180 |
| F3 | FRED Central to Lees Hill Center Via Lafayette | 0 | 0 | 0.0 | $0 | 676 | 9,734 | 1.0 | $37,180 | 676 | 9,734 | 1.00 | $37,180 |
| F4 | FRED Central -Central Park | 0 | 0 | 0.0 | $0 | 676 | 8,653 | 1.0 | $37,180 | 676 | 8,653 | 1.00 | $37,180 |
| | FRED Central - River Club | 0 | 0 | 0.0 | $0 | 676 | 8,207 | 1.0 | $37,180 | 676 | 8,207 | 1.00 | $37,180 |
| F5 | Weekend Downtown Tourist Loop | 0 | 0 | 0.0 | $0 | 676 | 5,814 | 1.0 | $37,180 | 676 | 5,814 | 1.00 | $37,180 |
| CV1 | Celebrate Virginia Circulator | 0 | 0 | 0.0 | $0 | 676 | 10,181 | 1.0 | $37,180 | 676 | 10,181 | 1.00 | $37,180 |
| D2a | Southern Stafford - FRED Central - GEICO | 0 | 0 | 0.0 | $0 | 676 | 10,160 | 1.0 | $37,180 | 676 | 10,160 | 1.00 | $37,180 |
| D2b | Southern Stafford - FRED Central - English Village | 0 | 0 | 0.0 | $0 | 676 | 9,802 | 1.0 | $37,180 | 676 | 9,802 | 1.00 | $37,180 |
| D3 | Stafford Courthouse - Aquia Towne Center | 0 | 0 | 0.0 | $0 | 676 | 7,456 | 1.0 | $37,180 | 676 | 7,456 | 1.00 | $37,180 |
| D4 | Stafford Marketplace - Porter Library | 0 | 0 | 0.0 | $0 | 676 | 9,248 | 1.0 | $37,180 | 676 | 9,248 | 1.00 | $37,180 |
| D5 | FRED Central to Stafford Courthouse | 0 | 0 | 0.0 | $0 | 676 | 14,737 | 1.0 | $37,180 | 676 | 14,737 | 1.00 | $37,180 |
| S1 | Lees Hill Center - Spotsylvania Towne Centre | 0 | 0 | 0.0 | $0 | 676 | 21,443 | 1.0 | $37,180 | 676 | 21,443 | 1.00 | $37,180 |
| S2a | Lees Hill Center - Germanna College | 0 | 0 | 0.0 | $0 | 676 | 10,140 | 1.0 | $37,180 | 676 | 10,140 | 1.00 | $37,180 |
| **FRED TOTALS** | | **0** | **0** | **0.0** | **$0** | **9,464** | **143,353** | **14.0** | **$520,520** | **9,464** | **143,353** | **14.0** | **$520,520** |
| M1 | Downtown/Central Park/Fall Hill/FRED | 429 | 5,217 | 1.0 | $23,595 | 0 | 0 | 0.0 | $0 | 429 | 5,217 | 1.00 | $23,595 |
| M2 | UMW/Central Park/Spotsylvania TC | 429 | 4,123 | 1.0 | $23,595 | 0 | 0 | 0.0 | $0 | 429 | 4,123 | 1.00 | $23,595 |
| M3 | UMW/Downtown/Central Park Late Night | 99 | 1,113 | 0.0 | $5,445 | 0 | 0 | 0.0 | $0 | 99 | 1,113 | 0.00 | $5,445 |
| **FRED Express TOTALS** | | **957** | **10,452** | **2.0** | **$52,635** | **0** | **0** | **0.0** | **$0** | **957** | **10,452** | **2.0** | **$52,635** |
| ***Saturday Total*** | | ***957*** | ***10,452*** | ***2.0*** | ***$52,635*** | ***9,464*** | ***143,353*** | ***14.0*** | ***$520,520*** | ***10,421*** | ***153,805*** | ***16.0*** | ***$573,155*** |

## TABLE 16: SUNDAY UNCONSTRAINED SERVICE PLAN ESTIMATED OPERATING COSTS

| Rte. # | Route Pattern | Existing Rev. Hrs | Existing Rev. Miles | Existing Daily Buses | Existing Annual Operating Costs | Expanded Rev. Hours | Expanded Rev. Miles | Expanded Daily Buses | Expanded Annual Operating Costs | Total Rev. Hours | Total Rev. Miles | Total Daily Buses | Total Annual Operating Costs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| F1 | FRED Central to Spotsylvania Towne Centre | 0 | 0 | 0.0 | $0 | 468 | 4,820 | 1.0 | $25,740 | 468 | 4,820 | 1.00 | $25,740 |
| F2 | FRED Central to Cosner's Corner Via J.D.H | 0 | 0 | 0.0 | $0 | 468 | 7,488 | 1.0 | $25,740 | 468 | 7,488 | 1.00 | $25,740 |
| F3 | FRED Central to Lees Hill Center Via Lafayette | 0 | 0 | 0.0 | $0 | 468 | 6,739 | 1.0 | $25,740 | 468 | 6,739 | 1.00 | $25,740 |
| F4 | FRED Central -Central Park | 0 | 0 | 0.0 | $0 | 468 | 5,990 | 1.0 | $25,740 | 468 | 5,990 | 1.00 | $25,740 |
| | FRED Central - River Club | 0 | 0 | 0.0 | $0 | 468 | 5,682 | 1.0 | $25,740 | 468 | 5,682 | 1.00 | $25,740 |
| F5 | Weekend Downtown Tourist Loop | 0 | 0 | 0.0 | $0 | 468 | 4,025 | 1.0 | $25,740 | 468 | 4,025 | 1.00 | $25,740 |
| CV1 | Celebrate Virginia Circulator | 0 | 0 | 0.0 | $0 | 468 | 7,048 | 1.0 | $25,740 | 468 | 7,048 | 1.00 | $25,740 |
| D2a | Southern Stafford - FRED Central - GEICO | 0 | 0 | 0.0 | $0 | 468 | 7,034 | 1.0 | $25,740 | 468 | 7,034 | 1.00 | $25,740 |
| D2b | Southern Stafford - FRED Central - English Village | 0 | 0 | 0.0 | $0 | 468 | 6,786 | 1.0 | $25,740 | 468 | 6,786 | 1.00 | $25,740 |
| D3 | Stafford Courthouse - Aquia Towne Center | 0 | 0 | 0.0 | $0 | 468 | 5,162 | 1.0 | $25,740 | 468 | 5,162 | 1.00 | $25,740 |
| D4 | Stafford Marketplace - Porter Library | 0 | 0 | 0.0 | $0 | 468 | 6,402 | 1.0 | $25,740 | 468 | 6,402 | 1.00 | $25,740 |
| D5 | FRED Central to Stafford Courthouse | 0 | 0 | 0.0 | $0 | 468 | 10,202 | 1.0 | $25,740 | 468 | 10,202 | 1.00 | $25,740 |
| S1 | Lees Hill Center - Spotsylvania Towne Centre | 0 | 0 | 0.0 | $0 | 468 | 14,845 | 1.0 | $25,740 | 468 | 14,845 | 1.00 | $25,740 |
| S2a | Lees Hill Center - Germanna College | 0 | 0 | 0.0 | $0 | 468 | 7,020 | 1.0 | $25,740 | 468 | 7,020 | 1.00 | $25,740 |
| **FRED TOTALS** | | **0** | **0** | **0.0** | **$0** | **6,552** | **99,244** | **14.0** | **$360,360** | **6,552** | **99,244** | **14.0** | **$360,360** |
| M1 | Downtown/Central Park/Fall Hill/FRED | 297 | 3,612 | 1.0 | $16,335 | 0 | 0 | 0.0 | $0 | 297 | 3,612 | 1.00 | $16,335 |
| M2 | UMW/Central Park/Spotsylvania TC | 297 | 2,854 | 1.0 | $16,335 | 0 | 0 | 0.0 | $0 | 297 | 2,854 | 1.00 | $16,335 |
| **FRED Express TOTALS** | | **594** | **6,466** | **2.0** | **$32,670** | **0** | **0** | **0.0** | **$0** | **594** | **6,466** | **2.0** | **$32,670** |
| ***Sunday Total*** | | ***594*** | ***6,466*** | ***2.0*** | ***$32,670*** | ***6,552*** | ***99,244*** | ***14.0*** | ***$360,360*** | ***7,146*** | ***105,710*** | ***16.0*** | ***$393,030*** |

## TABLE 17: ANNUAL ESTIMATED TOTAL UNCONSTRAINED OPERATING COSTS BY JURISDICTION

| Jurisdiction | Existing Rev. Hrs | Existing Rev. Miles | Existing Daily Buses | Existing Annual Operating | Expanded Rev. Hours | Expanded Rev. Miles | Expanded Daily Buses | Expanded Annual Operating | Total Rev. Hours | Total Rev. Miles | Total Daily Buses | Total Annual Operating Costs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City of Fredericksburg | 22,185 | 258,779 | 8.0 | $1,220,175 | 37,333 | 452,562 | 7.0 | $2,053,315 | 59,518 | 711,341 | 15.0 | $3,273,490 |
| Spotsylvania County | 14,408 | 201,623 | 6.0 | $792,413 | 21,094 | 321,182 | 6.0 | $1,160,184 | 35,502 | 522,806 | 12.0 | $1,952,596 |
| Stafford County | 14,535 | 237,035 | 6.0 | $799,425 | 19,745 | 303,656 | 3.0 | $1,085,975 | 34,280 | 540,691 | 9.0 | $1,885,400 |
| Caroline County | 4,590 | 125,827 | 2.0 | $252,450 | 11,730 | 205,387 | 6.0 | $645,150 | 16,320 | 331,214 | 8.0 | $897,600 |
| King George County | 4,080 | 130,537 | 2.0 | $224,400 | 5,610 | 145,841 | 2.0 | $308,550 | 9,690 | 276,378 | 4.0 | $532,950 |
| FRED Express | 1,848 | 19,933 | 2.0 | $101,640 | 0 | 0 | 0.0 | $0 | 1,848 | 19,933 | 2.0 | $101,640 |
| ***Annual Total*** | ***61,646*** | ***973,735*** | ***24.0*** | ***$3,390,503*** | ***95,512*** | ***1,428,628*** | ***24.0*** | ***$5,253,174*** | ***157,158*** | ***2,402,364*** | ***48.0*** | ***$8,643,676*** |

## TABLE 18: ESTIMATED UNCONSTRAINED COSTS FOR REPLACEMENT/EXPANSION VEHICLES

| Service Vehicle Needs | Peak Vehicles | Fleet Vehicles | Vehicle Type | Unit Cost | Total Cost |
|---|---|---|---|---|---|
| Replacement Revenue Vehicles | | 23 | Body on Chassis | $130,000 | $3,112,662 |
| Service Expansion Vehicles | 24 | 27 | Body on Chassis | $130,000 | $3,510,000 |
| Pool/Service Replacement Vehicles | | 4 | | $30,000 | $133,238 |
| **Total** | | **57** | | | **$7,055,900** |

**Replacement Vehicles use a factor of .03 for inflation beginning FY2012; Expansion vehicles do not factor inflation.*

## TABLE 19: OTHER UNCONSTRAINED CAPITAL NEEDS

| Other Capital Needs | Estimated Cost |
|---|---|
| **Transfer Location Needs**<br>Addition of Shelters, Benches and other Amenities to Primary Transfer Points throughout the service area | |
| a. Cosner's Corner/Lee's Hill Center | $15,000 |
| b. Stafford Marketplace | $15,000 |
| c. Shops at King George | $15,000 |
| **Bus Stop Needs** | |
| a. Benches (50 @ $1,000 Each) | $50,000 |
| b. Shelters (50 @ 10,000 Each) | $500,000 |
| c. Signage (100 new stops @ $157)<br>d. Signage (500 replacements @ $157) | $15,700<br>$78,500 |
| e. Rte. 3 Improved Stops (@ 12,000 Each) | $150,000 |

| Other Capital Needs | Estimated Cost |
|---|---|
| **Staffing Needs**<br>Addition of new staff and converting part-time staff to full-time employees | |
| a. Mechanic | $44,419 |
| b. Customer Service Rep. | $44,419 |
| c. Dispatcher | $33,492 |
| d. Security Officer | $20,442 |
| e. Data Entry Clerk | $20,442 |
| f. Janitorial Staff | $20,194 |
| g. Field Supervisors | $20,194 |
| h. Increase Part-Time to Full-Time | Varies |
| **Technology Needs** | |
| a. Route Planning Software | $100,000 |
| b. GPS Software Upgrades | $100,000 |
| c. Automated Farebox, Enunciators, etc. | $100,000 |

## SERVICE AND FACILITY RECOMMENDATIONS

Service and facility needs that are recommended for inclusion in the six-year TDP (FY2011 through FY2016) are identified based on anticipated available funding during the TDP time period. Estimates of service requirements for each year of the TDP are noted below in Table 20. Table 21 shows the service expansion projects proposed for implementation by year. Proposed improvements in this service plan reflect a 152 percent increase over FRED's existing annual service-hours.

**TABLE 20: ANNUAL FRED SERVICE REQUIREMENTS**

| Service Statistic | FY2011 | FY2012 | FY2013 | FY2014 | FY2015 | FY 2016 |
|---|---|---|---|---|---|---|
| Weekday Base Buses | 22.0 | 33.0 | 37.0 | 38.0 | 45.0 | 45.0 |
| Saturday Base Buses | 2.0 | 2.0 | 4.0 | 10.0 | 13.0 | 13.0 |
| Sunday Base Buses | 2.0 | 2.0 | 4.0 | 10.0 | 13.0 | 13.0 |
| Annual Rev. Bus Hours | 61,646 | 105,506 | 124,808 | 136,386 | 155,118 | 155,118 |

Other service improvements are identified in Chapter 4 of this TDP, but are not recommended for inclusion in the six-year TDP. Although these improvements are identified as service expansion needs, they are not deemed to be as critical with the greatest demand for anticipated to occur beyond the six year planning horizon. If funds are available, these improvements can be moved forward into the six-year TDP time period. Similarly, funding constraints could result in the need to shift some service improvements that have been identified for the six-year TDP to later years.

## CAPITAL IMPROVEMENT PROGRAM

Capital programs required to carry out the operations and services set forth in the TDP service and facility recommendations that are presented in the TDP include the revenue vehicle replacement program, non-revenue vehicle replacement program, vehicle expansion program, and facility improvement program, as shown in Tables 22 through 25.

## TABLE 21: PROPOSED SERVICE EXPANSIONS BY YEAR OF IMPLEMENTATION

| FY 2011 | Jurisdiction | Route | Existing Rev. Hrs. | Expanded Rev. Hrs. | Add'tl Vehicles | Total Rev. Hrs. | Additional O&M Cost |
|---|---|---|---|---|---|---|---|
| | None | | | | | 61,646 | |
| **FY 2012** | **Jurisdiction** | **Route** | **Existing Rev. Hrs.** | **Expanded Rev. Hrs.** | **Add'tl Vehicles** | **Total Rev. Hrs.** | **Additional Cost** |
| Split | Spotsylvania | S2a | 1,530 | 2,040 | 0.5 | 3,570 | $112,200 |
| Split | Spotsylvania | S2b | 1,530 | 2,040 | 0.5 | 3,570 | $112,200 |
| Split | Spotsylvania | S3b | 3,060 | 3,060 | 1.0 | 6,120 | $168,300 |
| Revised | Fredericksburg | F2 | 3,315 | 0 | 0.0 | 3,315 | $0 |
| Frequency | Fredericksburg | F1 | 2,805 | 4,335 | 1.0 | 7,140 | $245,578 |
| Frequency | Fredericksburg | F3 | 3,315 | 4,335 | 1.0 | 7,650 | $245,578 |
| Frequency | Fredericksburg | F4 | 2,805 | 4,845 | 1.0 | 7,650 | $274,469 |
| Frequency | Fredericksburg | | 3,060 | 4,590 | 1.0 | 7,650 | $260,024 |
| Frequency | Fredericksburg | F5 | 3,060 | 4,080 | 1.0 | 7,140 | $231,132 |
| Frequency | Spotsylvania | S1 | 5,100 | 6,120 | 2.0 | 11,220 | $346,698 |
| Frequency | Stafford | D3 | 2,805 | 4,335 | 1.0 | 7,140 | $245,578 |
| Frequency | Stafford | D5 | 3,060 | 4,080 | 1.0 | 7,140 | $231,132 |
| Total | | | 35,445 | 43,860 | 11.0 | 105,506 | $2,484,669 |
| **FY 2013** | **Jurisdiction** | **Route** | **Existing Rev. Hrs.** | **Expanded Rev. Hrs.** | **Add'tl Vehicles** | **Total Rev. Hrs.** | **Additional Cost** |
| Span of Service | Fredericksburg | F2 | 3,315 | 510 | 0.0 | 3,825 | $29,758 |
| Span of Service | Stafford | D1 | 2,550 | 510 | 0.0 | 3,060 | $29,758 |
| Split | Stafford | D2a | 3,060 | 510 | 0.0 | 3,570 | $29,758 |
| Split | Stafford | D2b | 0 | 3,570 | 1.0 | 3,570 | $208,308 |
| Span of Service | Stafford | D4 | 2,040 | 1,020 | 0.0 | 3,060 | $59,516 |
| Split New Rt | Spotsylvania | S3a | 0 | 3,060 | 1.0 | 3,060 | $178,549 |
| New Rt | Fredericksburg | CV1 | 0 | 4,204 | 1.0 | 4,204 | $245,301 |
| New Rt | Spotsylvania | VS2 | 0 | 2,486 | 1.0 | 2,486 | $145,057 |
| Weekend Service | Fredericksburg | F1 | 0 | 1,144 | 0.0 | 1,144 | $66,752 |
| Weekend Service | Fredericksburg | F4 | 0 | 2,288 | 0.0 | 2,288 | $133,504 |
| Total | | | 10,965 | 19,302 | 4.0 | 124,808 | $1,126,262 |
| **FY 2014** | **Jurisdiction** | **Route** | **Existing Rev. Hrs.** | **Expanded Rev. Hrs.** | **Add'tl Vehicles** | **Total Rev. Hrs.** | **Additional Cost** |
| Revised | Fredericksburg | F1 | 0 | 0 | 0.0 | 0 | $0 |
| New Rt | Fredericksburg | F6 | 0 | 3,570 | 1.0 | 3,570 | $214,557 |
| Weekend Service | Fredericksburg | F2 | 0 | 1,144 | 0.0 | 1,144 | $68,754 |
| Weekend Service | Fredericksburg | F3 | 0 | 1,144 | 0.0 | 1,144 | $68,754 |
| Weekend Service | Fredericksburg | F5 | 0 | 1,144 | 0.0 | 1,144 | $68,754 |
| Weekend Service | Stafford | D2a/b | 0 | 2,288 | 0.0 | 2,288 | $137,509 |
| Weekend Service | Stafford | D4 | 0 | 1,144 | 0.0 | 1,144 | $68,754 |
| Weekend Service | Spotsylvania | S1 | 0 | 1,144 | 0.0 | 1,144 | $68,754 |
| Total | | | 0 | 11,578 | 1.0 | 136,386 | $695,838 |
| **FY 2015** | **Jurisdiction** | **Route** | **Existing Rev. Hrs.** | **Expanded Rev. Hrs.** | **Add'tl Vehicles** | **Total Rev. Hrs.** | **Additional Cost** |
| Frequency | Caroline | C1 | 2,550 | 1,530 | 1.0 | 4,080 | $94,712 |
| Frequency | Caroline | C2 | 2,040 | 2,040 | 1.0 | 4,080 | $126,282 |
| Frequency | King George | K1 | 3,060 | 2,550 | 1.0 | 5,610 | $157,853 |
| Frequency | King George | K2 | 1,020 | 1,020 | 0.0 | 2,040 | $63,141 |
| New Rt | Caroline | C3 | 0 | 2,040 | 1.0 | 2,040 | $126,282 |
| New Rt | Caroline | C4 | 0 | 2,040 | 1.0 | 2,040 | $126,282 |
| New Rt | Caroline | C5 | 0 | 2,040 | 1.0 | 2,040 | $126,282 |
| New Rt | King George | K3 | 0 | 2,040 | 1.0 | 2,040 | $126,282 |
| Weekend Service | Stafford | D3 | 0 | 1,144 | 0.0 | 1,144 | $70,817 |
| Weekend Service | Stafford | D5 | 0 | 1,144 | 0.0 | 1,144 | $70,817 |
| Weekend Service | Spotsylvania | S2a | 0 | 1,144 | 0.0 | 1,144 | $70,817 |
| Total | | | 8,670 | 18,732 | 7.0 | 155,118 | $1,159,567 |
| **FY 2016** | **Jurisdiction** | **Route** | **Existing Rev. Hrs.** | **Expanded Rev. Hrs.** | **Add'tl Vehicles** | **Total Rev. Hrs.** | **Additional Cost** |
| | None | | | | | | |
| Total | | | 0 | 0 | 0 | 155,118 | 0 |

## TABLE 22: REVENUE VEHICLE REPLACEMENT SCHEDULE

| FRED Vehicle # | Date Delivered | Use | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|
| ***Existing Vehicles*** | | | | ***Vehicle Age - Replacement Year (R)*** | | | | |
| 716 | 1997 | Regular service | **R** | | | | | |
| 730 | 2004 | Regular service | **R** | | | | | |
| 731 | 2004 | Regular service | **R** | | | | | |
| 732 | 2004 | Regular service | **R** | | | | | |
| 735 | 2004 | Regular service | **R** | | | | | |
| 728 | 2004 | Regular service | 7 | **R** | | | | |
| 733 | 2004 | Regular service | 7 | **R** | | | | |
| 734 | 2004 | Regular service | 5 | **R** | | | | |
| 736 | 2006 | Regular service | 5 | **R** | | | | |
| 737 | 2006 | Regular service | 5 | **R** | | | | |
| 738 | 2006 | Regular service | 5 | **R** | | | | |
| 739 | 2006 | Regular service | 5 | **R** | | | | |
| 729 | 2004 | Regular service | 7 | 8 | **R** | | | |
| 740 | 2007 | Regular service | 4 | 5 | **R** | | | |
| 741 | 2007 | Regular service | 4 | 5 | **R** | | | |
| 742 | 2007 | Regular service | 4 | 5 | **R** | | | |
| 743 | 2007 | Regular service | 4 | 5 | **R** | | | |
| 744 | 2007 | Regular service | 4 | 5 | **R** | | | |
| 745 | 2007 | Regular service | 4 | 5 | **R** | | | |
| 746 | 2007 | Regular service | 4 | 5 | **R** | | | |
| 747 | 2007 | Regular service | 4 | 5 | **R** | | | |
| 748 | 2007 | Regular service | 4 | 5 | 6 | **R** | | |
| 749 | 2007 | Regular service | 4 | 5 | 6 | **R** | | |
| 750 | 2010 | Regular service | 1 | 2 | 3 | 4 | 5 | 6 |
| 751 | 2010 | Regular service | 1 | 2 | 3 | 4 | 5 | 6 |
| 752 | 2010 | Regular service | 1 | 2 | 3 | 4 | 5 | 6 |
| 753 | 2010 | Regular service | 1 | 2 | 3 | 4 | 5 | 6 |
| 754 | 2010 | Regular service | 1 | 2 | 3 | 4 | 5 | 6 |
| 755 | 2010 | Regular service | 1 | 2 | 3 | 4 | 5 | 6 |
| 756 | 2010 | Regular service | 1 | 2 | 3 | 4 | 5 | 6 |
| 757 | 2010 | Regular service | 1 | 2 | 3 | 4 | 5 | 6 |
| ***New Vehicles*** | | | | | | | | |
| n/a | 2011 | Regular service | 0 | 1 | 2 | 3 | 4 | 5 |
| n/a | 2011 | Regular service | 0 | 1 | 2 | 3 | 4 | 5 |
| n/a | 2011 | Regular service | 0 | 1 | 2 | 3 | 4 | 5 |
| n/a | 2011 | Regular service | 0 | 1 | 2 | 3 | 4 | 5 |
| n/a | 2011 | Regular service | 0 | 1 | 2 | 3 | 4 | 5 |
| n/a | 2012 | Regular service | | 0 | 1 | 2 | 3 | 4 |
| n/a | 2012 | Regular service | | 0 | 1 | 2 | 3 | 4 |
| n/a | 2012 | Regular service | | 0 | 1 | 2 | 3 | 4 |
| n/a | 2012 | Regular service | | 0 | 1 | 2 | 3 | 4 |
| n/a | 2012 | Regular service | | 0 | 1 | 2 | 3 | 4 |
| n/a | 2012 | Regular service | | 0 | 1 | 2 | 3 | 4 |
| n/a | 2012 | Regular service | | 0 | 1 | 2 | 3 | 4 |
| n/a | 2013 | Regular service | | | 0 | 1 | 2 | 3 |
| n/a | 2013 | Regular service | | | 0 | 1 | 2 | 3 |
| n/a | 2013 | Regular service | | | 0 | 1 | 2 | 3 |
| n/a | 2013 | Regular service | | | 0 | 1 | 2 | 3 |
| n/a | 2013 | Regular service | | | 0 | 1 | 2 | 3 |
| n/a | 2013 | Regular service | | | 0 | 1 | 2 | 3 |
| n/a | 2013 | Regular service | | | 0 | 1 | 2 | 3 |
| n/a | 2013 | Regular service | | | 0 | 1 | 2 | 3 |
| n/a | 2013 | Regular service | | | 0 | 1 | 2 | 3 |
| n/a | 2014 | Regular service | | | | 0 | 1 | 2 |
| n/a | 2014 | Regular service | | | | 0 | 1 | 2 |
| **Total Vehicles** | | | **31** | **31** | **31** | **31** | **31** | **31** |
| **Average Vehicle Age** | | | **3.0** | **2.5** | **1.7** | **2.3** | **3.3** | **4.3** |
| **Vehicles Replaced** | | | **5** | **7** | **9** | **2** | | |
| **Total Vehicle Cost** | | | **$650,000** | **$937,300** | **$1,241,253** | **$284,109** | **$0** | **$0** |

## TABLE 23: NON REVENUE REPLACEMENT VEHICLE PROGRAM

| FRED Vehicle # | Date Delivered | Use | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|
| ***Existing Vehicles*** | | | | ***Vehicle Age - Replacement Year (R)*** | | | | |
| 700 | 2002 | Pool Vehicle | 9 | **R** | | | | |
| 702 | 2009 | Pool Vehicle | 2 | 3 | 4 | **R** | | |
| 705 | n/a | Pool Vehicle | n/a | n/a | n/a | n/a | n/a | **R** |
| 706 | n/a | Pool Vehicle | n/a | n/a | n/a | n/a | n/a | **R** |
| 701 | 2008 | Service Vehicle | 3 | 4 | 5 | 6 | 7 | 8 |
| 704 | 2009 | Pool Vehicle | 2 | 3 | 4 | 5 | 6 | 7 |
| ***New Vehicles*** | | | | | | | | |
| n/a | 2012 | Pool Vehicle | | 0 | 1 | 2 | 3 | 4 |
| n/a | 2014 | Pool Vehicle | | | | 0 | 1 | 2 |
| n/a | 2016 | Pool Vehicle | | | | | | 0 |
| n/a | 2016 | Pool Vehicle | | | | | | 0 |
| n/a | 2018 | Service Vehicle | | | | | | |
| n/a | 2009 | Pool Vehicle | | | | | | |
| **Total Vehicles** | | | **6** | **6** | **6** | **6** | **6** | **6** |
| **Vehicles Replaced** | | | **0** | **1** | **0** | **1** | **0** | **2** |
| **Total Vehicle Cost** | | | **$0** | **$30,900** | **$0** | **$32,782** | **$0** | **$69,556** |

## TABLE 24: EXPANSION VEHICLES

| Expansion Vehicles | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|
| Total Expansion Vehicles | 0 | 11 | 4 | 1 | 7 | 0 |
| *Vehicles For Base Service* | *22* | *33* | *37* | *38* | *45* | *45* |
| *Total Vehicles Available* | *30* | *41* | *45* | *46* | *53* | *53* |
| Total Fleet Spare Ratio | 27% | 20% | 18% | 17% | 15% | 15% |
| **Total Vehicle Cost** | **$0** | **$1,472,900** | **$551,668** | **$142,055** | **$1,024,213** | **$0** |

## TABLE 25: FACILITIES IMPROVEMENT PROGRAM

| Bus Stops | Total Improvements | | | Total Cost of Improvements | | |
|---|---|---|---|---|---|---|
| | Signs | Benches | Shelters | Signs | Benches | Shelters |
| FY2011 | 0 | 0 | 0 | $0 | $0 | $0 |
| FY2012 | 107 | 20 | 20 | $17,303 | $20,600 | $206,000 |
| FY2013 | 133 | 12 | 12 | $22,153 | $12,731 | $127,308 |
| FY2014 | 115 | 3 | 3 | $19,729 | $3,278 | $32,782 |
| FY2015 | 140 | 10 | 10 | $24,739 | $11,255 | $112,551 |
| FY2016 | 105 | 5 | 5 | $19,111 | $5,796 | $57,964 |
| **Total** | **600** | **50** | **50** | **$103,034** | **$53,660** | **$536,604** |

# FINANCIAL PLAN

The financial plan is a principal objective of the TDP, as it demonstrates the agency's ability to provide a sustainable level of transit service over the TDP time period, including the rehabilitation and replacement of capital assets.

## OPERATING AND MAINTENANCE COSTS AND FUNDING SOURCES

FRED's proposed FY2011 operating budget is $3.9 million. This cost includes all salaries, fringe benefits, purchased services, fuel, vehicle maintenance, supplies, materials and other charges related to FRED service. Key expense and revenue assumptions utilized in the TDP Financial Plan (Table 26) are identified below. Costs in Table 26 reflect Year of Expenditure (YOE) dollars. Local funding requirements are based on several assumptions that may or may not occur, and assumptions will need to be revisited and revised in each year's budget process. Similarly, projects identified in the six-year TDP period can be moved forward or back, depending on availability of funding, regional grants, demographics, etc.

- Annual O&M costs during the TDP time period are based on a rate of $55.00 per revenue bus-hour (FY2011 dollars). A three percent annual inflation rate has been assumed during the TDP six-year time period beginning in FY2012.
- An additional line item for new staff in FY2011 is assumed to increase at the inflation rate of three percent beginning in FY2012.
- Farebox revenues from FRED riders are assumed to increase to a 12 percent farebox recovery ratio per hour of service proposed. Should fare revenues fall short of this percentage, FRED will implement fare increases to reach this level by FY2015. The farebox recovery ratio in this financial plan is assumed to be 7.3 percent in FY2011 and FY2012; 9.0 percent in FY2013 and FY2014; and 12.0 percent in FY2015 and 2016.
- Other local revenues (e.g., advertising) are assumed to increase at the assumed rate of inflation (3.0% per year).
- Partner contributions are assumed to remain flat each year.
- Federal Section 5307, Federal Section 5311, and state formula assistance funds are based on the VDRPT's Six Year Improvement Program (SYIP). This includes FRED's FY2011 Federal and State Funds as identified in the SYIP. These funds are assumed to increase at a rate of 3.6 percent in FY2012, 4.0 percent in FY2013, 4.1 percent in FY2014, 4.3 percent in FY2015, and 3.2 percent in FY2016. This is based on the FY2011 SYIP's total projection of operating assistance for the FY2011-FY2016 TDP timeframe. Any service expansion that exceeds these percentages is allocated to local contributions, as evident in the FY2015 rural area local share increase in Table 26. Future financial conditions may warrant changes to these percentages through annual TDP updates.
- This TDP assumes FRED will apply for and be awarded a CMAQ grant in FY2012 based on the cost to implement increased service frequencies on select routes, or $1,473,466. It is assumed that CMAQ funds awarded would cover 95 percent of the cost in FY2012 with a five percent local share, 80 percent of the cost in FY2013 with a 20 percent local share, and 65 percent in FY2014 with a 35 percent local share.

Another consideration worth noting is the potential effect of the 2010 US Census on FRED's operating budget. Currently, FRED receives operating assistance for routes in the urbanized area under the FTA Section 5307 Program. If FRED's population in the 2010 census exceeds the population limits set forth in Section 5307, FRED will lose federal funding assistance for these routes. This shortfall would need to be absorbed by local funding sources. Although the financial plan assumes the federal funds will remain intact, an additional line item is provided under the local contributions, Local Urbanized Area less 5307 Funds, which identifies the local contribution required if 5307 funds are not available. Rural areas receiving Section 5311 funds will not be affected by this potential change.

### BUS PURCHASE COSTS AND FUNDING SOURCES

This TDP assumes that federal funds will be available for replacement and expansion vehicles; however, funding is not guaranteed. If the availability of federal funds is less than the proposed service plan, additional local funding will be needed. Expansion and replacement costs in year of expenditure dollars are provided in Table 27.

### SUPPORT VEHICLE PURCHASE COSTS AND FUNDING SOURCES

This TDP assumes federal funds for service/pool vehicle replacements will be available, and local funding sources will make up any shortfalls that occur. Replacement costs in year of expenditure dollars are provided in Table 27.

### OTHER CAPITAL COSTS AND FUNDING SOURCES

This TDP identifies other capital items above and beyond the typical FRED capital budget. These are identified as follows:

- Software upgrades and planning software: FRED will apply for funds to add software upgrades to their existing GPS equipment, and to purchase planning software (such as Trapeze). FRED also plans to revamp its website, which will include an online option for passengers to look up where the bus is in relation to their stop; use their GPS signal to map stops in order to track the next bus; add enunciators for each stop and purchase automated fareboxes.
- Bus Stops, Shelters and Amenities: This TDP also identifies new routes and existing route changes that will require new stop signs. Additionally, benches and shelters are recommended throughout the service area. Bus stop signs are assumed at $157 each, shelters are assumed at $10,000 each, and benches are assumed at $1,000 each. An inflation rate of three percent is added to the costs in FY2012

## TABLE 26: TDP FINANCIAL PLAN FOR ANNUAL O&M COSTS
## (Costs in Year of Expenditure Dollars)

| TDP Financial Plan for: Service O&M Costs | FY2010 | FY 2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 | FY 2016 |
|---|---|---|---|---|---|---|---|
| **Annual Service-Hours** | | | | | | | |
| City of Fredericksburg Fixed Route | 22,185 | 22,185 | 44,370 | 52,516 | 59,518 | 59,518 | 59,518 |
| Spotsylvania Fixed Route | 14,408 | 14,408 | 27,668 | 33,214 | 34,358 | 35,502 | 35,502 |
| Stafford Fixed Route | 14,535 | 14,535 | 22,950 | 28,560 | 31,992 | 34,280 | 34,280 |
| Caroline Fixed Route | 4,590 | 4,590 | 4,590 | 4,590 | 4,590 | 14,280 | 14,280 |
| King George Fixed Route | 4,080 | 4,080 | 4,080 | 4,080 | 4,080 | 9,690 | 9,690 |
| UMW FREDExpress | 1,848 | 1,848 | 1,848 | 1,848 | 1,848 | 1,848 | 1,848 |
| ***Total Transit Service-Hours*** | ***61,646*** | ***61,646*** | ***105,506*** | ***124,808*** | ***136,386*** | ***155,118*** | ***155,118*** |
| **Projected Costs** | ***$ 3,390,530*** | ***$ 3,390,530*** | ***$ 5,976,915*** | ***$ 7,282,484*** | ***$ 8,196,797*** | ***$ 9,602,267*** | ***$ 9,890,335*** |
| FRED Operating & Maintenance Costs | | | | | | | |
| Base Service from Previous Year (Urban) | $ 2,913,680 | $ 2,913,680 | $ 3,001,090 | $ 5,650,332 | $ 6,979,892 | $ 7,906,002 | $ 8,362,006 |
| Change from Previous Year (Urban) | | $ - | $ 2,484,669 | $ 1,126,262 | $ 695,838 | $ 212,451 | $ - |
| Base Service from Previous Year (Rural) | $ 476,850 | $ 476,850 | $ 491,156 | $ 505,890 | $ 521,067 | $ 536,699 | $ 1,528,329 |
| Change from Previous Year (Rural) | | $ - | $ - | $ - | $ - | $ 947,116 | $ - |
| Administration (Additional Staff Needs) | | $203,602 | $ 209,710 | $ 216,001 | $ 222,481 | $ 229,156 | $ 236,031 |
| ***Total Projected O&M Costs*** | ***$3,390,530*** | ***$3,594,132*** | ***$ 6,186,625*** | ***$ 7,498,486*** | ***$ 8,419,278*** | ***$ 9,831,423*** | ***$ 10,126,366*** |

| TDP Financial Plan for: Service O&M Costs | FY2010 | FY 2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 | FY 2016 |
|---|---|---|---|---|---|---|---|
| **Anticipated Funding Sources** | | | | | | | |
| **Federal** | **$ 1,645,436** | **$ 1,518,709** | **$ 2,691,865** | **$ 2,496,686** | **$ 2,302,025** | **$ 1,371,157** | **$ 1,398,580** |
| FTA Section 5307 (FRED Urbanized) | $ 997,454 | $ 997,454 | $ 1,033,578 | $ 1,054,250 | $ 1,075,335 | $ 1,096,842 | $ 1,118,778 |
| FTA Section 5311 Caroline | $ 107,706 | $ 107,706 | $ 111,607 | $ 113,839 | $ 116,116 | $ 118,438 | $ 120,807 |
| FTA Section 5311 King George | $ 141,753 | $ 141,753 | $ 146,887 | $ 149,825 | $ 152,821 | $ 155,877 | $ 158,995 |
| CMAQ | $ 398,523 | $ 271,796 | $ 1,399,793 | $ 1,178,773 | $ 957,753 | $ - | $ - |
| **State** | **$ 502,310** | **$ 502,409** | **$ 520,497** | **$ 541,457** | **$ 563,730** | **$ 587,721** | **$ 606,432** |
| Formula Assistance Funds (FRED) | $ 425,013 | $ 425,097 | $ 440,402 | $ 458,136 | $ 476,982 | $ 497,281 | $ 513,113 |
| Formula Assistance Funds (Caroline) | $ 29,726 | $ 29,732 | $ 30,802 | $ 32,043 | $ 33,361 | $ 34,781 | $ 35,888 |
| Formula Assistance Funds (King George) | $ 47,571 | $ 47,580 | $ 49,293 | $ 51,278 | $ 53,387 | $ 55,659 | $ 57,431 |
| CMAQ | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| **Other** | **$ 162,500** | **$ 187,500** | **$ 178,190** | **$ 180,446** | **$ 182,769** | **$ 185,162** | **$ 187,627** |
| Greyhound Fees (Fred) | $ 70,000 | $ 70,000 | $ 72,100 | $ 74,263 | $ 76,491 | $ 78,786 | $ 81,149 |
| Vending Machines (Fredericksburg) | $ 3,000 | $ 3,000 | $ 3,090 | $ 3,183 | $ 3,278 | $ 3,377 | $ 3,478 |
| MWH (Fredericksburg) | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 |
| UMW (Fredericksburg) | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 |
| Star Radio Group (Fredericksburg) | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Free Lance-Star (Fredericksburg) | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| HCA Healthcare (Spotsylvania) | $ - | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 |
| Geico (Stafford) | $ 3,000 | $ 3,000 | $ 3,000 | $ 3,000 | $ 3,000 | $ 3,000 | $ 3,000 |
| Petro (Caroline) | $ 1,000 | $ 1,000 | $ 1,000 | $ 1,000 | $ 1,000 | $ 1,000 | $ 1,000 |
| Evergreen(Fredericksburg) | $ 500 | $ 500 | $ 500 | $ 500 | $ 500 | $ 500 | $ 500 |
| Idlewild Village (Fredericksburg) | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 |
| Other | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| **Farebox Revenues** (Farebox Recovery Ratio) | **$ 255,000** | **$ 276,000** | **$ 486,540** | **$ 655,424** | **$ 737,712** | **$ 1,152,272** | **$ 1,186,840** |
| Urban | $241,232 | $262,000 | $446,558 | $609,893 | $690,816 | $974,214 | $1,003,441 |
| Rural | $13,768 | $14,000 | $39,982 | $45,530 | $46,896 | $178,058 | $183,399 |
| **Local Contributions for O&M** | **$825,284** | **$1,109,514** | **$2,309,533** | **$3,624,473** | **$4,633,042** | **$6,535,111** | **$6,746,886** |
| Urban Area (5307) | $689,958 | $974,435 | $2,197,948 | $3,512,097 | $4,515,556 | $5,595,110 | $5,776,078 |
| Rural Area (5311) | $135,326 | $135,079 | $111,585 | $112,376 | $117,486 | $940,001 | $970,808 |
| **Local Urbanized Area less 5307 Funds* | *$1,687,412* | *$1,971,889* | *$3,231,526* | *$4,566,347* | *$5,590,891* | *$6,691,951* | *$6,894,856* |
| ***Total Projected Operating Revenues*** | ***$3,390,530*** | ***$3,594,132*** | ***$6,186,625*** | ***$7,498,486*** | ***$8,419,278*** | ***$9,831,423*** | ***$10,126,366*** |

1. Service statistic increases based on service plans described in Chapters 4 and 5 of the TDP.
2. O&M cost estimates for FY2010 and FY2011 were obtained by the FRED budget and VDRPT SYIP.
3. O&M cost estimates for FY2011 through FY2016 are based on $55.00 in FY2011 dollars with 3% inflation beginning in FY2012.
4. Farebox revenues are based on a 7.4 percent to 12.0 percent farebox recovery ratio per hour of service provided.
5. Vending and Greyhound increase at the rate of inflation, all other local revenues are assumed to remain flat.
6. Federal and State operation funds are based on the FY2011 VDRPT SYIP, and increase based on the overall state projected fund increases for FY2012 through FY2016.
7. Local funds are based on the remaining balance required to implement service.
8. CMAQ funds are based on the assumption that a grant will be awarded for the service.

**TABLE 27: TDP FINANCIAL PLAN FOR CAPITAL COSTS**
**(Year of Expenditure Dollars)**

| TDP Financial Plan for: Fleet Replacement and Expansion | FY2010 | FY2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 | FY 2016 |
|---|---|---|---|---|---|---|---|
| **Number of Vehicles** | | | | | | | |
| Replacement | 1 | 5 | 7 | 9 | 2 | 0 | 0 |
| Expansion | 0 | 0 | 11 | 4 | 1 | 7 | 0 |
| Service/Pool Vehicles | 0 | 1 | 0 | 1 | 0 | 2 | 0 |
| ***Total Vehicles*** | 1 | 6 | 18 | 14 | 3 | 9 | 0 |
| **Vehicle Costs** | | | | | | | |
| Replacement | $ 300,000 | $ 650,000 | $ 937,300 | $ 1,241,253 | $ 284,109 | $ - | $ - |
| Expansion | $ - | $ - | $ 1,472,900 | $ 551,668 | $ 142,055 | $ 1,024,213 | $ - |
| Service/Pool Vehicles | $ - | $ 30,900 | $ - | $ 32,782 | $ - | $ 69,556 | $ - |
| ***Total Projected Vehicle Costs*** | ***$ 300,000*** | ***$ 680,900*** | ***$ 2,410,200*** | ***$ 1,825,703*** | ***$ 426,164*** | ***$ 1,093,769*** | ***$ -*** |
| **Anticipated Funding Sources** | | | | | | | |
| Federal | $ 240,000 | $ 544,720 | $ 2,410,200 | $ 1,460,562 | $ 340,931 | $ 875,016 | $ - |
| State | $ 48,000 | $ 108,944 | $ - | $ 292,112 | $ 68,186 | $ 175,003 | $ - |
| Local | $ 12,000 | $ 27,236 | $ - | $ 73,028 | $ 17,047 | $ 43,751 | $ - |
| ***Total Vehicle Revenues*** | ***$ 300,000*** | ***$ 680,900*** | ***$ 2,410,200*** | ***$ 1,825,703*** | ***$ 426,164*** | ***$ 1,093,769*** | ***$ -*** |

* Assumes 80/10/10 match

| TDP Financial Plan for: Facility, Equipment, and Other Capital | FY2010 | FY 2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 | FY 2016 |
|---|---|---|---|---|---|---|---|
| **Projected Facility, Equipment, and Other Capital Improvements** | | | | | | | |
| Misc. Capital (From Budget) | $ 263,156 | $ 39,820 | $ 41,015 | $ 42,245 | $ 43,512 | $ 44,818 | $ 46,162 |
| Bus Shelters | $ - | $0 | $206,000 | $127,308 | $32,782 | $112,551 | $57,964 |
| Benches | $ - | $0 | $20,600 | $12,731 | $3,278 | $11,255 | $5,796 |
| Replacement of Bus Stop Signage | $ - | $0 | $17,303 | $22,153 | $19,729 | $24,739 | $19,111 |
| GPS Software Upgrades & Planning Software | $ - | $300,000 | $ - | $ - | $ - | $ - | $ - |
| Transit Center Facilities | $ - | $ - | | $ - | | $ - | |
| ***Total Projected Capital Expenses*** | ***$ 263,156*** | ***$ 339,820*** | ***$ 284,918*** | ***$ 204,436*** | ***$ 99,302*** | ***$ 193,362*** | ***$ 129,033*** |
| **Anticipated Funding Sources** | | | | | | | |
| **Federal** | **$ -** | **$ -** | **$ -** | **$ 10,000** | **$ 8,000** | **$ -** | **$ -** |
| Other Capital Items (From SYIP) | | | | $ 10,000 | $ 8,000 | | |
| **State** | **$ -** | **$ 300,000** | **$ -** | **$ 1,000** | **$ 1,000** | **$ -** | **$ -** |
| State Capital Assistance (Not Awarded) | | $ 300,000 | | | | | |
| Other Capital Items (From SYIP) | | | | $ 1,000 | $ 1,000 | | |
| **Local** | **$ 263,156** | **$ 339,820** | **$ 284,918** | **$ 194,436** | **$ 91,302** | **$ 193,362** | **$ 129,033** |
| ***Total Other Capital Revenues*** | ***$ 263,156*** | ***$ 639,820*** | ***$ 284,918*** | ***$ 205,436*** | ***$ 100,302*** | ***$ 193,362*** | ***$ 129,033*** |

1. Anticipated funding sources for fleet replacement and expansion vehicles are assumed at 80% Federal, 10% State and 10% Local.
2. Federal funds for other capital items are assumed to increase based on the VDRPT SYIP FY2012-2016 projections.
3. State IT Grant assumes an award will be granted.
4. Misc. Capital items are based on the FY2011 budget and increase at 3% inflation rate beginning in FY2012.

## TDP Monitoring and Evaluation

Goals and objectives from this TDP should be reviewed and incorporated into the City's Comprehensive Plan and its annual budget process. Close coordination is also required with Spotsylvania, Stafford, King George and Caroline Counties, as well as UMW and other financial partners for FRED. Coordination efforts must also continue with the Fredericksburg Area Metropolitan Planning Organization (FAMPO). The service plans set forth in this TDP should be included in the Long Range Transportation Plan (LRTP) and short-range 3-year Transportation Improvement Program (TIP). Coordination meetings with other transit providers as needed are suggested as a means to ensure continual communication and awareness of service planning efforts.

This TDP has identified specific system-wide service performance benchmarks to ensure FRED's existing performance characteristics do not degrade substantially. Corrective measures are to be taken if these monitoring efforts identify service performance degradation (e.g., through route alignment adjustments, headway and/or span of service adjustments). This TDP recommends a monitoring program that could be used for periodic service evaluation.

### ANNUAL TDP MONITORING

The DRPT requires submittal of an annual letter that provides updates to the contents of this TDP. Recommended contents of the TDP Update letter include:

- A summary of ridership trends for the past 12 months.
- A description of TDP goals and objectives that have been advanced over the past 12 months.
- A list of improvements (service and facility) that have been implemented in the past 12 months, including identification of those that were noted in this TDP.
- An update to the TDP's list of recommended service and facility improvements (e.g., identify service improvements that are being shifted to a new year, being eliminated, and/or being added). This update of recommended improvements should be extended one more fiscal year to maintain a six-year planning period.
- A summary of current year costs and funding sources.
- Updates to the financial plan table presented in Chapter 7 of this TDP. This table should be extended one more fiscal year to maintain a six-year planning period.